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UNIVERSITY OF ALBERTA

A PSYCHOLOGICAL TYPE COMPARISON OF CREE AND NON-NATIVE JUNIOR HIGH STUDENTS - IMPLICATIONS FOR EDUCATION

BY

PATRICIA L. ROSIN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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IN

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "A psychological type comparison of Cree and non-Native junior high students - Implications for education" submitted by Pat Rosin in partial fulfillment of the requirements for the degree of Master of Education in Counselling Psychology.

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Dr. Frederick J. Boersma

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Date: June 14 1993

Abstract

This study examined MBTI-Form F psychological type differences between 107 Cree junior high students (62 males and 45 females), 174 non-Native students (99 males and 75 females) and the CAPT Data Bank junior high school sample (256 males and 321 females) to assess possible cross-cultural and gender differences. Modal type was identified for each group, with Cree males being ISTP compared to the ESTP modal type of non-Native male samples. Cree females exhibited the same modal type (ESFP) as the non-Native female groups. Significant gender differences were noted for all groups, with males being more highly T and females more highly F, supporting the need for separate gender analyses. The results indicated cultural differences, with Cree students (both male and female) showing a strong SP (Dionysian temperament) preference in comparison to the non-Native groups. Furthermore, Cree males were found to be more strongly I. All junior high groups exhibited a definite P preference, indicating a "go-with-the-flow" type of attitude, irrespective of gender. Implications of these gender and cultural differences for junior high students were discussed.

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I. INTRODUCTION

Canadian 1981 Census data for Alberta indicated that non-Natives were significantly better educated than Natives, even though Natives have been achieving higher levels of education over time (Alberta Department of Native Affairs, 1985). Yet, "...the widespread withdrawal of Indian students from educational institutions before they have completed all of the requirements for a high school diploma has raised concerns as to the quality of Indian education both among educators and Native Elders" (Wall & Madak, 1991, p. 43).

Discussion with the Alberta Department of Education revealed that there currently is no "hard" data available on the dropout rate of Native junior high school students, although according to personal communication from a member of the Department of Education, "there is a major problem" (personal communication, September 10, 1992). This leads to questions regarding the efficacy and validity of applying non-Native educational approaches to Native populations.

As discussed by Fourqurean, Meisgeier, and Swank (1988), students often "find themselves dissociated from the school/learning environment and become "at risk" for school failure" (p. 42). To date, there has been no reliable or accepted model for explaining school failure in either

Native or non-Native populations. Until recently, explanations for the discrepancy between students' abilities and their academic achievement have focused on intellectual factors and reasoning skills such as those measured by IQ and scholastic aptitude tests. According to Saracho (1983), "There is still no firm foundation upon which researchers can prescribe better instructional methods and curricula to improve the quality of education for all children" (p. 188), or for Native junior high school students in particular. As educators and researchers continue the search for more effective and appropriate solutions to the problem, they are becoming more open to different approaches, including those routes that look beyond intellectual and cognitive factors.

> When children of adequate ability find the school classroom a place of frustration and failure, the causative variables probably have noncognitive underpinnings. These nonintellectual or noncognitive variables have been referred to as temperament, personality type, attitude, self-concept, learning style, and cognitive style. (Fourqurean, Meisgeier, & Swank, 1988, P.42).

The link between learning style and psychological type has also been discussed by Kiersey and Bates (1984) and Lawrence (1984, 1992). This raises the possibility that

learning style or personality type may be an instrumental factor in school success. Research has indicated the presence of differences in learning style between Native and non-Native students (More, 1984; Karlebach, 1984; & Williams, 1986, cited in Moore, 1987, p. 23). However, the "differences are not consistent enough to suggest uniquely Indian learning style, but they occur often enough to warrant careful attention" (Moore, 1987, p. 23). Moore suggests that the learning style differences may be related to different background experiences, different value systems and different child-rearing practices, rather than to racial or genetic differences. This raises the question as to whether learning style differences might be reflected in distinctly different modal personality types or in specific preferences for Native students in comparison to non-Native Canadian students.

Moody (1992) reported an ESTP (extraverted, sensing, thinking, perceiving) modal type for native Hawaiian and part-Hawaiian university students. Based on this information, he described a school program (KEEP) designed to facilitate more effective classroom operation and learning for this type of student, where teachers were instructed in the use of teaching strategies based on psychological type and Hawaiian culture that were most

suitable for working with native Hawaiians. The success of this program was attributed to its focus on training teachers "to teach to type".

Holland (1985, cited in Gade, Fuqua, & Hurlburt, 1988, p. 183) theorized that school satisfaction is related to specific personality types. "The greater the congruence between a student's personality pattern and the educational environment the more satisfying the interactions will be" (p. 183). Jungian psychological type preference has been related to a number of educational studies (Myers & McCaulley, 1985).

> The extent to which various type preferences are related to school functioning in children may have important implications for teaching students at all academic levels. It is important to investigate these relationships as this knowledge is essential for furthering the theoretical base linking psychological type preferences with academic functioning. (Fourqurean, Meisgeier, Swank & Murphy, 1988, p.38)

Jungian psychological type theory, as operationalized by the Myers-Briggs Type Indicator (MBTI) (Myers, 1962), "provides a useful framework for understanding the

educational process, particularly individual differences in academic achievement and success" (Tobacyk, Wells & Springer, 1988, p. 47). Type theory has been commonly linked to learning styles and to academic self-concept (Lathey, 1991; Lawrence, 1984; Tobacyk, Wells & Springer, 1988; Fourqurean, Meisgeier & Swank, 1988).

The MBTI is a pencil and paper self-report measure of an individual's preferences about the way the individual generally approaches life, takes in information, and makes decisions based on that information. The MBTI requires a forced-choice response between two items and, upon completion of the instrument, allows categorization of the individual on four bipolar scales: extraversion-introversion (E/I), sensing-intuition (S/N), thinking-feeling (T/F), and judging-perceiving (J/P). This results in 16 possible type preference combinations for the MBTI score. These four scales are described more completely in Chapter 2.

MBTI research has been conducted and reported with increasing frequency as the instrument gains credibility and popularity. The ability of the MBTI to differentiate between different types of students holds promise for developing curricula material and teacher training programs to better meet the needs of specific types of students. The

MBTI also holds promise for identifying cross-cultural type differences between students.

Further research is needed to ascertain the role that personality type plays in interactions between the Native junior high student's individual characteristics ("type"), his/her learning environment, and his/her educational success. Based on research currently being conducted by Moody (1992), there are possible implications for teachers, the provincial educational system, and counsellors from the MBTI results of Hawaiians. Moody (1992) found a significant modal type for native Hawaiians. This raises the question: Is there a modal type for Native Canadians? If the answer is yes, then what are the implications for teachers and the educational system in working with Native populations?

The purpose of this exploratory research was fourfold:(1) to ascertain if there is a distinct modal type or a specific preference pattern for Cree junior high school students in comparison to the non-Native and Centre for Application of Psychological Type (CAPT) junior high data bank samples; (2) to determine whether similar gender differences exist in the Cree and non-Native students as were found in the CAPT data base sample; (3) to examine the methodology and implications for effective cross-cultural research using the MBTI; and (4) to explore the implications

of personality type on the educational processes with this Native population.

II. REVIEW OF THE LITERATURE

The purpose of this chapter is to examine the existing literature and research relevant to Jungian psychological type theory as operationalized by the MBTI and to investigate how type theory relates to Native and non-Native junior high students and their education. Following a discussion of general personality theory, trait theory, and Jung's theory of types, this presentation will describe the Myers-Briggs Type Indicator (MBTI) and provide a rationale and theoretical support for the use of type with young adolescents. The presentation will then focus on current research discoveries that are related to the implications of type for Native and non-Native junior high school education. Native cultural history, personality characteristics and the resultant educational implications will be discussed following the same format. The chapter will include a critical evaluation of available literature and research prior to presentation of the specific questions to be asked in this study.

Personality Theory

What is personality? The term comes from the Latin, *persona*, meaning mask (Hergenhahn, 1990). Each individual has an intuitive understanding of what is meant by the word personality, based on his/her own personal definition. We

may refer to an individual as having "a lot of personality", or "a wonderful personality", or "no personality at all". This use of the term personality tends to be highly evaluative (Hall & Lindzey, 1985, chapter 5), yet it is difficult to find a precise, descriptive definition. As Reber (1985) states, personality is "a term so resistant to definition and so broad in usage that no coherent simple statement about it can be made" (p. 533). Within the realm of psychology there are as many different definitions of personality as there are theorists who study this area. As stated by Hall and Lindzey (1985), "It is important to keep in mind that no one of these definitions is *the* definition of personality" (p.4).

Within the vast array of definitions proposed from a variety of type, trait, psychodynamic, behaviorist, environmental (situational), interactional and social learning perspectives, there are a number of common elements that can identify the constituent parts of personality (Reber, 1985). There is consensus among theorists that personality consists of characteristics or distinctive qualities within an individual (Allport, Cattell, & Eysenck, cited in Hall & Lindzey, 1985; Allport & Cattell, cited in Hergenhahn, 1990; Jung, cited in O'Connor, 1985). These qualities are relatively stable over a variety of situations

and are generally "enduring" qualities that last throughout the lifetime of an individual. In private or personal moments these qualities (characteristics) may be unobservable, whereas, in social situations, these enduring characteristics may be readily observable to others by way of an individual's overt behavior. As well, there are aspects of personality which are available to an individual at a conscious level and other aspects which remain in the unconscious, of which an individual is not immediately aware (Ewen, 1988, chap. 1; Hall & Lindzey, 1985; Hergenhahn, 1990).

Personality Trait Theory

These characteristics which constitute personality are commonly referred to as "traits" by some theorists (Allport & Cattell cited in Hergenhahn, 1990; Eysenck & Guilford cited in Hall & Lindzey, 1985). Although each of these theorists has devised their own specific trait theories, there are some common elements. The central tenet of trait theory is that personality consists of underlying attributes, general functional units or structures called traits. According to Mischel (1973, cited in Stagner, 1977), the following assumption is shared by trait theorists: "personality comprises broad underlying dispositions which pervasively influence the individual's

behavior across many situations and lead to consistency in his behavior." According to Allport (cited in Hergenhahn, 1990), traits account for the consistency in human behavior and help organize experiences, therefore both initiating and guiding behavior.

The debate in trait theory centers around the question of whether traits actually exist within an individual, or whether an individual's behavior is merely dependent on a given situation. When people describe themselves or each other, they rely heavily on trait vocabulary descriptors such as helpful, shy, outgoing, withdrawn, aggressive, and so on. Ross and Nisbett (1991) concluded that:

> The evidence to date thus suggests that people automatically - and unconsciously - provide a dispositional interpretation to behavioral information. And it further suggests that the dispositions they favor are suspiciously similar to the trait constructs fabled in song, story, and personology texts. (p. 122)

Stagner (1977) also concluded that "the use of trait labels is deeply embedded in popular psychology" (p. 203). Stagner contended that both scientific research and everyday language support the continued use of the trait concept. "Our trait labels indicate that people in our culture have

been able to perceive these differences and have found the vocabulary helpful to communication" (Stagner, 1977, p. 203). Just as the importance of situational and environmental factors must be acknowledged, the trait construct must not be ignored. The trait construct should be used where and when applicable to assist in predicting, interpreting or explaining the behavior of individuals.

Jungian Personality Theory

According to Hergenhahn (1990), one of the goals of the personality theorist is to show not only how we are the same as other humans, but also how we are different. Theorists like Freud, Adler, Sullivan and Fromm proposed that one instinct (albeit different from theorist to theorist) was primary for everyone (Kiersey & Bates, 1984). Carl Jung disagreed. "He said that people are different in fundamental ways even though they all have the same multitude of instincts (archetypes) to drive them from within. One instinct is no more important than another" (Kiersey & Bates, 1984).

Prior to discussing Jung's typology theory, it is necessary to examine Jung's views on personality structure and development within an individual. According to Jung (1934a, p.171, cited in Hall & Lindzey, 1985,):

> Personality is the supreme realization of the innate idiosyncracy of a living being. It is an act of high courage flung in the face of life, the absolute affirmation of all that constitutes the individual, the most successful adaptation to the universal condition of existence coupled with the greatest possible freedom for self-determination. (p. 111)

This definition encapsulates Jung's central concept of the total personality, stemming from his belief that individuals are born with wholeness, or the potential for wholeness, and that what one experiences and learns through living serves to fulfill this potential and allow the individual to achieve harmony with the self and with the world. In Jung's view, the ultimate goal of life is the optimal development of wholeness for each individual.

Jung called this total personality the psyche, from the Greek word for "spirit" or "soul", encompassing all thought, feeling and behavior, both conscious and unconscious. The psyche assists an individual in adapting to the social and physical environment and is powered by the libido or the whole of psychic energy (Hall & Lindzey, 1985; CW:6 Jung, cited in Hull, 1971). While a detailed examination of the many postulated components of the psyche is beyond the scope

of this presentation, a brief discussion of the psyche, as theorized by Jung, is necessary.

As stated earlier, the psyche includes all thought, feeling and behavior, both conscious and unconscious. According to Jung (1968; CW:6 1971, cited in Hall & Lindzey, 1985), the psyche is composed of three distinct yet constantly interacting components: the conscious, the personal unconscious, and the collective unconscious.

Consciousness appears early in life and is the part of the psyche that is known and available to the individual. The ego organizes and regulates the conscious mind and "determines what perceptions, thoughts, feelings, and memories will enter consciousness" (Hall & Lindzey, 1985, p. 112), in order to maintain a sense of coherence, continuity and identity within the individual. Should the ego not accept or select certain experiences, they remain in the personal unconscious, available to consciousness if and when required. The individual is usually unaware of the experiences stored in the personal unconscious. Jung characterized the personal unconscious as "comprising all the acquisitions of personal life, everything forgotten, repressed, subliminally perceived, thought, and felt" (Jung, 1971, p. 156; Jung, 1971, p. 475).

The concepts of the conscious and personal unconscious were not new to personality theory. However, Jung's third component of the psyche was definitely the most controversial concept:

> In addition to these personal unconscious contents, there are other contents which do not originate in personal acquisitions but in the inherited possibility of psychic functioning in general, i.e., in the inherited structure of the brain. These are mythological associations, the motifs and images that can spring up anew anytime, anywhere, independently of historical tradition or migration. I call these contents the collective unconscious. (1921/1971, p. 485; and 1971, p. 156)

The collective unconscious was the heart of Jung's theory (Hergenhahn, 1990) and reflects the collective human experience. As Jung stated, the collective unconscious is the "deposit of ancestral experience from untold millions of years, the echo of prehistoric world events to which each century adds an infinitesimally small amount of variation and differentiation" (Jung, 1962, cited in Hergenhahn, 1990). Thus, the contents of the collective unconscious are basically the same for all people.

Jung postulated that the relationship between the unconscious processes and consciousness is of a compensatory nature, in that the unconscious processes, together with the consciousness, bring the sublimated material to the surface as it is evoked by the conscious situation. The collective unconscious can be thought of as a "substrate level of psychic activity that is to do with inherited predispositions to act or react in certain ways to certain life situations" (O'Connor, 1985, p. 22). Jung termed these innate behavioral patterns *archetypes*. In Jung's view, all that is inherited is composed of primordial images - "thought forms or memory traces from our ancestral past - not only our human past but also our prehuman animal ancestry" (Hall & Lindzey, 1985, p. 113) accompanied by a predisposition to "create significant images or myths out of the so-called common stuff of life" (O'Connor, 1985, p. 23). These images represent to consciousness innate predispositions for responding to typical situations experienced in life - birth, death, relationships, etc.

> The archetype is an eternal mythic motif which is not born of personal experience, but comes as a cultural or ancestral inheritance. Archetypes are reflected in fairy tales, myths, legends,

> literature, and cultural norms, but are also inherent in individual psyches (Rytting, 1990, p. 16).

Jung identified a number of archetypes contained in the collective unconscious. Four of these archetypes are relevant to an understanding of Jung's theories of personality typology and will be discussed briefly as they are most important in shaping personality and behaviour.

The first of these archetypes is the persona, which as the Latin word for mask suggests, is the social self, i.e., that part of the personality an individual exhibits publicly. The persona "reflects our perception of the role society expects us to play in life. It also reflects the way we wish to be seen by others" (Hall & Lindzey, 1985, p. 114-115). Through the persona, an individual relates to the outside world, but the persona is not ones' true self.

> While the mask (or indeed several masks) is a necessary and vital piece of social equipment useful for social lubrication, the task of being...is to strive to complete ourselves; that is, to bring into the light of consciousness *all* of who we are. (O'Connor, 1985, p. 61)

The persona is necessary for the survival of the individual, since it helps the person to control his/her feelings, thoughts and behaviour. Problems arise, according

to Jung, if one over-identifies with the persona, thereby becoming alienated from one's self and one's feelings.

Whereas, the persona is the outer personality, the anima/animus is the inner personality; that is, "the way one behaves in relation to one's inner psychic processes" (Jung, 1971, p. 138). Jung theorized that the anima is generally complementary to the character of the persona, meaning that the anima contains all the basic human qualities that the conscious attitude lacks. For example, "if the person is intellectual, the anima will quite certainly be sentimental" (Jung, 1971, p. 139). The complementary nature of the anima is also reflected in the sexual character of the individual. According to Jung, every individual has qualities of the other sex, including physiological characteristics, as well as feelings, attitudes and values. "The anima reflects the 'feminine' side of the male psyche - feelings and emotionality; the animus reflects the 'masculine' side of the female psyche - logic and rationality" (Hall & Lindzey, 1985, p. 115).

The shadow archetype, consisting of basic instincts or animal nature, "personifies everything that the subject refuses to acknowledge about himself and yet is always thrusting itself upon him" (Jung, 1921, CW9:1:24, cited in O'Connor, 1985, p. 46). According to Jung, the shadow

contains all of the elements which, because of their incompatibility with the person's chosen conscious attitude, are refused conscious expression. Therefore, the shadow acts in a compensatory or balancing way in relation to the consciously held attitudes and beliefs. Jung maintained that the shadow was potentially the most powerful and most dangerous of the archetypes, as it represents strong emotions, spontaneity and the creative urge, thereby possessing the capability of exerting both a positive and a negative effect on everyday conscious life (Miller, 1981).

In order to organize, harmonize and balance the various constituents of personality, the self archetype is necessary. The concept of wholeness or oneness is a critical element of Jungian theory. It is the self archetype that motivates or propels the individual toward the goal of wholeness. The self can be seen as the midpoint of personality, with all the other systems clustered around this centre. The self "directs the process of individuation, through which the useful and creative aspects of the unconscious are made conscious and channeled into productive activity" (Hall & Lindzey, 1985, p. 116). The existence of the self archetype makes possible the ultimate goal of achieving selfhood, i.e., individuation, which is similar to Maslow's concept of self-actualization

(Hergenhahn, 1990). Jung defined the process of individuation as a reconciliation and integration of the opposites within us, achieved by bringing into consciousness the unconscious aspects of our being (O'Connor, 1985). The theme of opposites is found throughout Jung's writing and becomes a central tenet of his typology theory. Self is both the agent and the means of individuation, while paradoxically remaining the goal.

While Jung theorized that the goal of individuation was the development of a unified, whole personality, he doubted that the unconscious could ever be made totally conscious. Jung (1954) stated, "Personality, as the complete realization of our whole being, is an unattainable ideal. But unattainability is no argument against the ideal, for ideals are only sign posts, never the goal." (p. 172) The struggle towards the ideal was a lifelong process, beginning before birth. While Locke saw a child as a *tabula rasa* (Cole & Cole, 1989), Jung believed that a child's psyche existed as a whole from which the various aspects of the personality developed into separate identities through the process of individuation. Jung postulated that environmental factors influenced the development of the child's inborn qualities and character, rendering each person unique.

Jungian Type Theory

Throughout his life, Jung was fascinated by the uniqueness and tremendous diversity between individuals (Jung, 1921/1971). Jung's fascination with individual differences led him to develop his theory of psychological types.

Typology systems for classifying people are not new. Throughout history, attempts have been made to bring order to the seemingly random distribution of differences. Ancient Oriental astrologers identified four elements (air, water, earth and fire) and developed a system to classify individuals accordingly. Physiological typing has been based on Hippocrates' body humours (phlegmatic, choleric, sanguine and melancholic) as well as on Sheldon Kretchmer's system of physical body type (endomorph, mesomorph and ectomorph). Jung's typology theory was the first personality typology and also the first based on individual psychic processes.

According to Jung, all aspects of the personality, other than the ego, function almost exclusively at the unconscious level. Jung posited that there are two aspects of personality that operate at both the conscious and unconscious levels - the attitudes and the functions (Hall & Lindzey, 1985). Jung attributes personality differences in

people to these two basic processes. The attitudes represent the characteristic direction of libido or psychic energy movement, while the functions represent the way an individual takes in internal and external stimuli and information (Jung, 1971).

Jung noticed that there were some individuals who were more active, while others were more passive and reflective, leading him to theorize that the psychic energy of individuals flowed both inward (toward the subject) and outward (toward the object). Jung termed the former attitude introversion and the latter attitude extraversion. Jung (1921/1971) defined attitude as "a readiness of the psyche to act or react in a certain way" (1921/1971, p. 414) and "is synonymous with an *a priori* orientation to a definite thing" (p. 414), whether conscious or unconscious. Thus, while the extravert directs all his energy toward the object and thinks, feels and behaves in relation to the object and the outside world, the introvert, whose psychic life "is played out wholly within" (p. 551), orients to the subject and is most comfortable in his own inner world.

To distinguish a person as a introvert or an extravert, the attitude (introversion or extraversion) must be reflective of the individual's typical or customary way of acting and reacting. As Jung stated, "introversion or

extraversion, as a typical attitude, means an essential bias which conditions the whole psychic process, establishes the habitual reactions, and thus determines not only the style of behaviour, but also the nature of subjective experience" (1933, p. 99). The whole psychology (personality) of an individual is oriented in accordance with his/her habitual attitude, which is a result of all of the factors influencing his/her life, such as innate dispositions, environmental factors and life experiences (Jung, 1921/1971, P. 416).

The attitudes of introversion/extraversion offered a partial explanation for individual differences in the location of energy focus (inner vs. outer world). However, they failed to account for differences in the ways individuals obtained or dealt with information. While other theorists see behaviour as random, Jung viewed behaviour in terms of "patterns in the way people prefer to perceive and make judgements" (Lawrence, 1992, chap. 1, p. 6). These patterns Jung called "psychological types". Jung theorized that conscious mental activity could be grouped into four mental processes or functions - two perceiving processes (sensing and intuition) and two judgement processes (thinking and feeling). "What comes into consciousness, moment by moment, comes either through the senses or

intuition. To remain in consciousness, perceptions must be used. They are used - sorted, weighed, analyzed, evaluated - by the judgment processes, thinking and feeling" (Lawrence, 1992, chap. 1, p. 6).

To further his clarification of personality types, Jung posited four psychic functions, based on "notions expressed in current speech", to clarify the differences between people of the same attitude type (1933, p. 102). Jung narrowed the terms down to four that could not be "related or reduced to one another" (1921/1971, p. 437).

In his determination to use everyday language for the sake of clarity and simplicity, Jung gave the following explanation for the meaning of the four functions:

> Namely, sensation tells you that there is something. Thinking, roughly speaking, tells you what it is. Feeling tells you whether it is agreeable or not to be accepted or rejected. And intuition - there is a difficulty because you don't know ordinarily how intuition works. When a man has a hunch, you can't tell exactly how he got that hunch or where that hunch came from. It is something funny about intuition. (cited in Evans, 1976, p. 99)

To more fully understand Jung's theory, it is vital to appreciate his usage of the terms perception and judgement as related to the functions:

> Perception includes the many ways of becoming aware of things, people, events or ideas. It includes information gathering, the seeking of sensation and inspiration, and the selection of the stimulus to be attended to. Judgement includes all of the ways of coming to conclusions about what has been perceived. It includes decision making, evaluation, choice and the selection of the response after perceiving the stimulus. (Myers & McCaulley, 1985, p. 12)

Jung divided the perceptive functions into two categories - sensing and intuition. They were termed irrational functions because they are "attuned to the flow of events and operate most broadly when not constrained by rational direction" (Myers & McCaulley, 1985, p. 12). Brainstorming would be an example of an irrational function.

Sensing (S) refers to perceptions available by way of the senses, thereby establishing what presently exists. Intuition (N) refers to "perception of possibilities, meanings and relationships by way of insight" from the unconscious (Myers & McCaulley, 1985, p. 12).

Jung also divided the rational judging functions of thinking and feeling into two categories. They were termed rational because they "are directed toward bringing life events into harmony with the laws of reason" (p. 12). Thinking (T) links ideas together by way of logical connections, relying on the rather impersonal principles of cause and effect. Feeling refers to decision making that weighs the relative values and merits of the issues and relies on understanding of personal group values. Thus, while thinking is more objective and analytical, feeling is more subjective.

The key assumption in Jungian type theory is that the four functions pull in opposite directions. Just as a ship needs a captain to set the course, so does an individual need a captain of his/her personality. Jung called the "captain" of personality the dominant function. All of the other functions are subordinate to the dominant function and serve the goals of the dominant function. (Myers & McCaulley, 1985) For Jung, the differentiation of the functions from each other was the key to understanding personality development. Since it is impossible to be everything at once, an individual must develop some functions at the expense of others (Jung, 1933, p. 106). Jung claimed that each individual had an inherent

predisposition for one of the four functions and that, through frequent usage, that function was strengthened, developed and differentiated. This heavily relied upon or dominant function, influences how the individual sees and reacts to his/her environment, which further reinforces that function. Ultimately, an individual will habitually approach life from the position of the dominant function. As Progoff (1953) said, "The individual uses his leading or dominant function not merely as a means of experiencing the world, but as the basis around which he organizes his personality" (p. 102).

As the dominant function develops "there is a *relative* neglect of the opposite pole of the same preference" (Myers & McCaulley, 1985, p. 14), reflecting the bipolar nature of Jungian concepts. In Jung's theory, the environment the child grows up in plays a crucial role in personality development, since factors in the environment may enhance or curtail the development of the child's natural preferences. While the dominant function is developing, Jung believed that the other functions remained at lower levels of consciousness, although still capable of exerting an influence on personality development by acting as compensatory opposites to the dominant function.

According to Jung, the least developed function, called the inferior function, was that directly opposite the dominant function. Thus, if the dominant function was thinking, the inferior function was feeling. The second most developed function Jung called the auxiliary function. If the dominant function was rational (thinking or feeling) the auxiliary function was irrational (sensing or intuition) and vice versa. (Jung, 1921/1971; Myers & McCaulley, 1985). Jung recognized the lesser functions but focused his attention primarily on the dominant and auxiliary functions.

> The demands of society compel a man to apply himself first and foremost to the differentiation of the function with which he is best equipped by nature, or which will secure him the greatest social success. Very frequently, indeed, as a general rule, a man identifies more or less completely with the most favoured and hence the most developed function. It is this that gives rise to the various psychological *types*. As a consequence of this one-sided development, one or more functions are necessarily retarded. These functions may properly be called inferior in a psychological sense, since they are in no way morbid but merely backward as compared with the favorite function. (Jung, 1921/

1971, p. 450)

From Jung's (1921/1971) perspective, further elaborated by Myers and McCaulley (1985), personality or type development is viewed as a lifelong process during which an individual gains greater command and mastery over the functions of perception and judgement. Development occurs by striving for mastery in the dominant and auxiliary functions while becoming passable in the lesser functions. To pose a simple Jungian developmental model: In childhood the goal is to develop the dominant function; in adolescence and young adulthood the goal is to develop the auxiliary function but not to the same extent as the dominant function; in mid-life the goal is to develop the third and fourth (inferior) functions. "A very few exceptional persons may reach a stage of individuation where they can use each function easily as the situation requires" (Myers & McCaulley, 1985, p. 15). Based on Jung's theory, youth is the time for specialization, leaving mid-life as the time for generalization.

Jung's theory of typology, far from seeing personality as static, views personality as a dynamic interaction of preferences. Jung (1921/1971) defined his two attitudes (extraversion and introversion) and four functions (sensing,

intuition, thinking and feeling) leading to a classification of eight preference types:

1) extraverts with dominant sensing;

2) introverts with dominant sensing;

3) extraverts with dominant intuition;

4) introverts with dominant intuition;

5) extraverts with dominant thinking;

6) introverts with dominant thinking;

7) extraverts with dominant feeling; and

8) introverts with dominant feeling.

Jung (1921/1971) described the auxiliary function but gave minimal details concerning the need for an auxiliary function that was "in every respect different from the nature of the primary function" (p. 406). Jung's theory was further developed by Myers and Briggs (Myers & McCaulley, 1985) to more fully expose the dynamic interaction of the preferences. They assumed that:

1. One function will be dominant for each type.

2. People will use their first function in their favorite attitude. Thus, extraverts use their dominant function in the outer world while introverts use their dominant function in the inner world of concepts and ideas.

3. The auxiliary (second) function develops to

provide balance between extraversion and introversion, assisting the person to develop skills in living in both the inner and outer world. In Jung's model, extraverts show their "best"/dominant function to the world, whereas introverts show their second best function to the outer world. However, "good type development fosters the ability to extravert comfortably and to introvert comfortably, but assumes also a natural preference for one attitude or the other" (Myers & McCaulley, 1985, p. 16).

4. The auxiliary function provides balance between perception and judging. Therefore, if the dominant function is a perceptive function (S or N), the second function will be a judgement one (T or F) and vice versa. The development of the auxiliary function allows an individual to learn both functions (perception and judgement), thereby learning how to take in information and how to make decisions.

5. The judging/perceiving points to the function used in the outer world by both extraverts and introverts. This JP preference was added by Myers

and Briggs to describe differences "concerning one's preference for dealing with the environment" (Evans, Benner & Hayes, 1984, p. 4).

6. When the dominant function is extraverted, the three non-dominant functions will be introverted and vice versa. This view is based on Jung's comment (CW:16:387 cited in Myers & McCaulley 1985, p. 294) that "the counterbalancing functions of feelings, intuition and sensation are comparatively unconscious and inferior and therefore have a primitive extraverted character that accounts for all the troublesome influences from the outside to which the introverted thinker is prone."

7. The function opposite the dominant function is the inferior or least preferred function.

8. The function opposite the auxiliary function is the tertiary function.

Jung's intention was not classification: "It is not the purpose of a psychological typology to classify human beings into categories - this in itself would be pretty pointless" (Jung, 1921/1971, p. 554). Jung viewed typology as a way to begin to make sense of the vast array of individual differences, to gain further understanding of the

wide variations that occur among individuals and as a way to gain self-understanding (Myers, 1980). Thus, Jung's type classification system provides points of reference or a framework from which understanding of the underlying processes is possible. Type theory is not an end in itself, but "is a means to an end" (Evans, 1976, p. 108). "The essence of the seemingly random variation in behaviour is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use their perception and judgement" (Myers & McCaulley, 1985, p. 1).

> Type theory is best summarized in Jung's own words: My whole scheme of typology is merely a sort of orientation. There is such a factor as introversion; there is such a factor as extraversion. The classification of human individuals means nothing at all. It is only the instrumentality, for what I call "practical psychology", used to explain, for instance, the husband to a wife, or vice versa ... it only makes sense as a scheme when you deal with practical cases. (Evans, 1976, p. 97, 108)

The Myers-Briggs Type Indicator

The development of the Myers-Briggs Type Indicator (MBTI) operationalized Jung's theory into practical applicability. Whereas Jung used the model in his clinical

practice, Isabel Myers developed the MBTI "to test and use Jung's theory with nonclinical populations" (McCaulley, 1990, p. 181). Katherine Briggs and her daughter, Isabel Briggs Myers, studied Jung's model intensely and spent years informally observing people's behaviour. In 1942, Isabel Myers began developing forms and collecting data that would allow Jungian typology theory to become "understandable and useful in people's lives" (Myers & McCaulley, 1985, p. 1). In 1962 the MBTI was made available as a research instrument and by 1975 was "considered ready for applied use" (McCaulley, 1990, p. 182). The MBTI is currently being used for individual, family and group counselling; academic and career counselling; understanding learning and teaching style differences; and leadership training and management skills (McCaulley, 1990).

The MBTI is a self-administered paper and pencil questionnaire in a forced-choice format. The Indicator measures self-reported preferences for Jung's two attitudes and four preferences, as understood by Myers. Myers added a fourth dimension with the inclusion of the judging/ perceiving (JP) scale to describe personality differences concerning one's preference for dealing with the environment. The judging preference involves planning ahead, being organized, having closure and control. The

perceiving preference allows for remaining flexible, spontaneous, keeping options open and trying to understand the world (Carlson, 1980; Evans, Benner & Hayes, 1984).

There are numerous forms of the MBTI: Form B is the standard form and has 126 questions; Form F (166 questions) and Form J (290 questions) are the research forms of the instrument. Form K is the expanded analysis form. There is also a self-scoring Form G with 66 questions. The MBTI is designed for use with individuals from ages 11- 12 and up.

The MBTI contains four bi-polar preference scales as described below:

***Extraversion* (E) or *introversion* (I)** - whether energy (perception and judgement) is directed to the outer (E) or inner (I) world.

***Sensing* (S) or *intuition* (N)** - which kind of perception is preferred to gather information.

***Thinking* (T) or *feeling* (F)** - which kind of judgement is utilized in decision making.

***Judgement* (J) or *perception* (P)** - whether an individual deals with the world in the judging attitude (either thinking or feeling) or in the perceptive attitude (either sensing or intuition).

The MBTI items consist of paired statements reflecting preferences related to each scale. The numerical scores

produced on each of the eight poles are used "to determine the *relative* preference of one over the other" (McCaulley, 1985, p. 183). The scores indicate the dominant preferences on each of the four scales and produce a four letter "type" code. There are 16 possible types, each "considered to have unique behavioral patterns, with special gifts and strengths, areas of vulnerability and pathways for development" (Goodyear, 1989, p. 435).

Reliability and Validity Evidence for the Myers-Briggs Type Indicator

As stated previously, since 1975 the MBTI has been widely used in a variety of contexts, including counselling, vocational, clinical and educational settings (Boersma, Kienholz & Jevne, 1985; Carlson, 1989; Dilley, 1987; Kelly, 1991; McCaulley, 1990; Thompson & Borello, 1986a, 1986b), as a tool for working with *normal* populations: The MBTI "may be found useful in psychotherapy...as a means of normalizing individual differences" (Myers, 1961, p. 78, cited in Test Critiques Volt, 1984, p. 485).

> The MBTI is appropriate for adults and high school students. More caution should be used in interpreting results with middle and junior high school students. These groups can be profitably tested for research; for example, to explore type

differences in interests or learning styles. (Myers & McCaulley, 1985, p.6)

In spite of the proliferation of published research related to the MBTI, few reliability reports exist that are based on extensive, comprehensive and methodologically sound studies. As reported in Test Critiques, Vol. I (1984):

> Assessment of reliability data on the MBTI draws on a body of findings largely based on post-elementary and college populations. Comparison of these findings, however, is complicated by the two data types (preference and continuous) obtained from the MBTI, the variety of statistical procedures employed and the existence of three forms in current use (i.e. F, G and AV). (p. 487)

Form F has been used more extensively for research purposes and the test manual recommends the use of continuous scores rather than dichotomous type scores.

Carlyn (1977) reviewed the MBTI reliability evidence to 1977 and reported: "Estimated reliabilities of type categories appear to be satisfactory" (p. 465) irrespective of the scales examined. Internal consistency reliability coefficients for continuous scores ranged from .69 to .87 and test-retest data supported the stability of the MBTI scales both separately and when combined to produce the

four-letter type. Carlyn found that "scores of college students appear to be reasonably stable over time in terms of type category, while older subjects's scores appear to be even more stable" (Carlson, 1985, p. 358), with Pearson product moment correlations ranging from .69 to .83 over two month periods.

More recent review of the MBTI by Carlson (1985 and 1989) confirmed Carlyn's (1977) findings and added further evidence in support of the MBTI's reliability. Carlson (1985) reported satisfactory internal and test-retest reliability on both forms F and G "with r values of individual scales often exceeding .80" (p. 363). Carlson (1985) acknowledged the need for further reliability assessment within a wide variety of test conditions and populations, since many of the existing studies involved students in university settings. He also recommended longer test-retest intervals. These same recommendations were reported by Carlson (1989), Carlyn (1977) and Cowan (1989). Possibly what is needed is an assessment of reliability from a practical viewpoint addressing the following question: How many times (out of 100) would a skilled counsellor or practitioner make the same assessment or judgement?

Concerning the validity of the MBTI, the crucial question is: Does the MBTI measure what it was designed to

measure, that is, Jungian typology? Recent research has concentrated on construct validity which McCaulley (1981) states is the "most relevant in establishing the validity of the MBTI since the Indicator was constructed specifically to implement a theory" (p. 319). Carlyn (1977) determined that, for both continuous scores and type category scores, the MBTI measures three dimensions of personality which are relatively independent of each other: extraversion-introversion, sensing-intuition and thinking-feeling (p. 463). Carlyn (1977) found the judgement-perception dimension to be related to at least one of the other dimensions. Thompson and Borrello (1986a and 1986b) found consistent supportive evidence of construct validity, as did Carlson (1989) and Geer, Ridley and Levy (1991). Sipps, Alexander and Friedt (1985) and Sipps and DiCaudo (1988) found supportive discriminative and convergent validity evidence, but raised the issue that the EI scale may be a measure of sociability and the JP scale a measure of impulsivity, rather than of what they are purported to measure.

Reliability and validity are empirically important in determining test useability, especially in research settings. At the same time, face validity is important from the perspective of the test taker. Carlson (1989) called

this concept test credibility. He contends that test credibility for the MBTI user and test-taker is increased if the psychological reality of the MBTI is obvious to the test taker. To Carlson (1989), "psychological reality" means that, upon receiving the test interpretation, the individual realizes the parallels "between the descriptions of the individual from the test and the individuals' own self-perceptions" (p. 484). The confirmation may come in the form of a statement such as, "That's me. You've hit the nail on the head." or "That's exactly what I'm like." This congruency is not surprising since the MBTI is a *self*-report instrument and should report only information supplied by the test taker. The more important factor here is that the MBTI reports the information in an understandable fashion. The MBTI, as an instrument for studying Jungian typology, focuses on individual differences and individual uniqueness rather than attempting to relate all individuals to their place on the normal curve.

The Tenth Mental Measurement Yearbook (1989) calls the MBTI "an excellent example of a construct-oriented test that is inextricably linked to Jung's (1923) theory of psychological types (p. 206). Willis, in Test Critiques (1984) provides further support for the use of the MBTI and states:

> All of these factors - the explosion of research reports, the normality of test items and type descriptions, the positive nature of the instrument, the ease of administration and scoring, the usefulness of the theory, the development of the support organization CAPT, the publishing of a dedicated journal - have shared a role in the wide acceptance of the MBTI. (p. 490)

While there are articles refuting the usefulness and applicability of the MBTI (Healy, 1989; Garden, 1991), many researchers support the use of the MBTI as a useful tool in helping individuals understand themselves and how they relate to others and their environment (Goodyear, 1989; Carlson, 1989a, 1989b; Willis, 1984; Johnson & Saunders, 1990). More research is needed to determine the validity of the MBTI and typology with populations from different cultures and age groups.

Theoretical Support for the Use of Type with Children

Jung (1921/1971) theorized that the development of type preferences is a lifelong process, beginning at birth. As stated earlier in this chapter, Jung contended that children are born with inherent predispositions to prefer certain functions rather than others, leading to greater use, and hence strengthened development of those preferences. "Type theory sees people as initially undifferentiated in their behaviour, but gradually developing or confirming preferences" (Bayne, 1988, p. 170). This view is supported by Dilley (1987) and Meisgeier and Murphy (1987b) who assert that:

> Although any attempt to associate type development with particular ages should be done with extreme caution due to lack of research in this area, there seems to be consensus that the elementary and beginning middle school years are important and formative in the development of healthy type, self-esteem, and the effective utilization of the dominant function in learning and growth tasks(p.7).

Although Bayne (1988) agrees with the above statement, he has developed a model of "normal" development in psychological type, based on the work of Jung (1921/1971)

and Myers and McCaulley (1985). Bayne (1988) postulates that the period from birth to age 10 is a time in which behaviour is initially undifferentiated, with the dominant function beginning to emerge as time passes. During this time period both introversion and extraversion develop, although one is preferred and developed more strongly. Bayne (1988) also proposes that between the ages of 10 and 20, the auxiliary function develops, although it remains less influential than the dominant function. The originator of the concept of psychological type, Jung (1921/1971) made numerous references to the existence, development and importance of type preference in children (p. 332, 516, 517). Jung posited that the notion of type in children is concerned mainly with introversion/extraversion and the development of the dominant function (Jung, 1921/1971; Bayne, 1988, Myers & McCaulley, 1985, Meisgeier & Murphy, 1987b).

MBTI Research Related to Education and Junior High School Students

Research in the area of psychological type, using the MBTI, has approached the topic from a variety of different angles, including: 1) comparing type based on the four letter type combination generated by the MBTI; 2) focusing solely on one attitude or function derived from the MBTI; or

3) grouping two or three functions together. Carlson and Levy (1973) reviewed four studies using the MBTI in a variety of contexts with black college students and determined that the type patterns selected for a specific research purpose should be chosen by "examining the components which are theoretically important in the immediate context" (p. 574). Carlson and Levy (1973) also point out that "since any particular situation will invoke only a portion of the typological pattern, critical predictions should be based upon those components of the total type pattern which are intrinsically relevant to the problem at hand" (p. 563). Based on Carlson and Levy's recommendations as outlined above, this presentation will address the current MBTI research related to junior high school education, focusing on learning style, teaching style, falsification of type and classroom environment.

Numerous researchers, including Kiersey and Bates (1978); Lawrence (1979, 1992); Murphy and Meisgeier (1989); Golay (1982); Neff (1988); Kroeger and Thuesen (1988); Myers and Myers (1980) have published various interpretations relating the characteristics of different types and type combinations to education, specifically learning style. Due to the extensive nature of the available literature, it would not appear necessary to review the material in this

presentation. A more prudent approach will be taken for this purpose, in the form of a review of the recent research results associated with the education of junior high school students and Native junior high school students in particular.

As presented earlier, the MBTI was developed for adults and high school students and "caution should be used in interpreting results with middle and junior high school students" (Myers & McCaulley, 1985, p. 6) even though the required reading level is approximately seventh to eighth grade. Use and application of type preference in junior high school education is predicated on the assumption that the additional available information about the individual differences and unique abilities of each student will be of value in the classroom, by assisting teachers, parents, friends and the individual student in developing an understanding of their differences and the impact of those differences on everyday life. Meisgeier and Murphy (1987b) advise teachers to be "flexible in applying type concepts in the classroom" (p. 13) and have developed a publication specifically for teachers entitled A Teacher's Guide to Type: A New Perspective on Individual Differences in the Classroom. The information from this booklet will be discussed in the chapter five.

According to Bayne's (1988) model of "normal" development in psychological type, the ages from 10 to 20, encompassing the junior high and high school years, are when the auxiliary function develops, but remains less influential than the dominant function (p. 170). Coinciding with this on-going development of type preference are the Piagetian developmental stages of growth, namely, the beginning of formal operations at approximately age 12 (Cole & Cole, 1989; Beard, 1969). When the above changes are coupled with the physical changes occurring in the body during the period of early adolescence, it seems an understatement to say that the central tenet of this period is **CHANGE**.

Carlson (1980) reports that "accumulating evidence suggest that a very broad range of cognitive styles and skills may be understood in terms of typological patterns" (p. 801). The MBTI manual (Myers & McCaulley, 1985) predicts that students who prefer the attitude introversion and the function intuition "will show greater academic aptitude than persons who prefer extraversion and sensing" (p. 96). Academic achievement is associated with the ability to deal with concepts and ideas (introversion) and the "capacity to work with abstraction, symbols and theory, which are the province of *intuition*" (p. 96). Learning

requires concentration and effort, which are qualities found more frequently in Judging types, who have greater ease in focusing their energy. "Type preferences are also related to interest. The interest students bring to learning is expected to relate to the match or mismatch between their type preferences and the content to be learned or the way the content is taught" (p. 102). Based on the MBTI Data Bank data as presented in the MBTI Manual, "introverts and intuitives tend to have higher grades" (p. 102) which is expected based on their higher aptitude. At the same time "J students also tend to have higher grades in spite of lower aptitude...thus the three preferences that make the main contribution to scholastic success are I, N, and J" (p. 104). Carlyn (1977)and Willis (1984) support the assertion that judging types tend to achieve higher grades, even though perceiving types usually perform better on scholastic aptitude and abstract reasoning tests.

A cautionary note is advisable at this point: the MBTI data for these results were collected from samples of college students, high school students and gifted junior high students. Due to the nature of the normative populations, it is not possible to accept the above results as absolutely definitive for junior high school students in general, or Native junior high students in particular.

The overachievement by judging types found by Carlyn (1977), Willis (1984) and Myers & McCaulley (1985) may be due to the judging individual's planned and organized ("work before play") approach to life in general and to school work in particular. The tendency for perceiving individuals to procrastinate and to play before working may contribute to their underachievement.

Junior high is a transition period from the more personal, social (extraverted), concrete (sensing) environment of the elementary school to the less personal, less social (introverted), more abstract (intuitive) environment of the high school. The MBTI Manual (Myers & McCaulley, 1985) estimates the types of students at different levels of education and shows that generally "extraverts and sensing types outnumber introverts and intuitives, but the proportion of introverts and intuitives increases at higher levels of education" (p. 133). The Manual shows that teachers at the elementary level are frequently ESFJ's (12.1% of elementary school teachers). This result is supported by Boersma, Kienholz & Jevne (1985). At the junior high school level, ISFJ (12.23%)and ISTJ (11.7%) are the most frequent types for teachers. These figures reflect the transition in focus from group to individual between elementary and junior high school, while

still maintaining the more concrete, sensing orientation to learning.

Evans, Benner and Hayes (1985) reported that approximately 75% of the population prefers the sensing function while Lawrence (1992) is more conservative, citing the ratio as 2:1. In either case, both the intuitive student and intuitive teacher are a minority in the classroom. Intuitives must then interact with other individuals who differ greatly in relation to how each type preference perceives information. The intuitive individual may be put at a distinct disadvantage because, unlike the extravert for whom "what you see is what you get", the introvert displays his/her auxiliary function to the rest of the world. The introvert utilizes his/her dominant function in the inner world. Problems arise for the student if he/she consistently fails to have a teacher who speaks his/her language (Myers & McCaulley, 1985).

There has been a tendency in recent MBTI research to focus on the ways information is perceived. Carlson (1989), as part of his supporting evidence for the use of the MBTI, reported one such study on the time spent "evaluating incoming stimuli" (p. 485). The study was conducted by Ware, Wilson & Yokomoto (1986) who investigated the TF dimension. The authors reported that thinking types spent

significantly longer looking at photographs presented to them than did feeling types. From this result, the authors suggest that thinking types spend more time "weighing" the facts via analysis and logic. The feeling types are hypothesized to "rely more on their sheer 'likes and dislikes' in evaluating information" (p. 485). These findings have ramifications in the classroom in all grades, not solely junior high school. Teachers need to be aware of individual and type differences in time required to process interpretive material when presenting visual and auditory material to the students. Students must first take in (perceive) the information prior to processing it. The time required to complete each of these steps will vary, depending on the student's type. It should also be noted that students can be expected to arrive at different conclusions as a result of the varying aspects of the presented information (stimuli) that are more important to them.

Kelly (1991) utilized the MBTI with fourth through twelfth grade conduct disordered and emotionally disturbed students from a mixed ethnic, socio-economic and urban-suburban population. Kelly (1991) found that the "conduct disordered group did not significantly vary from Myer's norm in any of the 16 type comparisons" (p. 32) which strongly

suggests that the MBTI relevant preferences of the conduct disordered appear to be quite similar to those of "general student population". This conclusion supports his view that these students are normal students who end up in special programs due to misbehaviour. Kelly also found that the emotionally disturbed group significantly varied from Myer's norms and the total conduct disordered group, with ISTJ's, ISFJ's and ISTP's being significantly overrepresented and ESTJ's significantly underrepresented.

While there are a few published reports of the use of the MBTI with junior high school students, to date I have been unable to locate any studies utilizing the MBTI with Native junior high school students.

Teaching Style, Learning Style, Classroom Environment and Falsification of Type

Meisgeier and Murphy (1987b) report that the most frequent type for students from grades two to eight was ENFP (24.1%), while the modal type was E (74.2) S (57.4%) F(79.6%) P (65.8%)(p. 25). As reported earlier, the most frequent types for junior high school teachers are ISFJ (12.12%) and ISTJ (11.7%), based on CAPT data (Table 8629422). The modal type for junior high teachers was E (53.3%) S (55.1%) F(60.5%) J(65.7%). These results indicate the potential for serious misunderstanding and

miscommunication and a negative teaching/learning style match for a number of students in the classroom. One of the saving graces at the junior high level is that both feeling students and teachers "value interpersonal interactions and the effects of affect, approval and acceptance upon the educational process" (Evans, Benner & Hayes, 1985, p. 13). Barrett (1985) reported that while each component of personality type may have a negative or a positive effect on classroom environment, the author found E, S, F, P preferences "more frequently linked to certain positive classroom environments, while I, N, T, J preferences were less frequently linked to these" (p. 56). Carlson (1985) reported the results of a conformity study which showed that both ES and EF types conformed more easily than IN types. Hence the IN types appear "out of step" in the classroom environments.

As Kiersey and Bates (1978) state, elementary "school is made for SJ's and largely run by SJ's" (p. 40) who want to find out what they are supposed to do and then do it. Carlson (1989) believed that the judging-perceiving function is very important in relationships, influencing student/teacher rapport. Carlson (1989) reported on a study that found "differences on the judging-perceiving dimension were correlated with the greatest number of reported

problems" (p. 485), likely due to differences between these two type preferences. The planned approach to life of the J's contrasts with the spontaneity and desire for flexibility of the P's. These differences will have an impact on the classroom environment.

What happens to students when their type fails to match the teacher's type? Researchers (Barrett, 1985; Dilley, 1987; Bayne 1988; Meisgeier & Murphy 1987b) have suggested that pressure from the teacher and the classroom environment can lead to false type development. This possibility has serious implications for the classroom since falsified individuals may become skillful in using an initially less preferred function, but may also be less content, may feel less competent or may be out of touch with their own gifts (Myers & McCaulley, 1985, cited in Meisgeier & Murphy, 1987b).

The literature does not appear to address the issue of whether children should be taught about type or given an indication of what their type preference is. Lawrence (1992) appears to be one of the few who advocate the use of type and an explanation about type in the classroom. It would seem reasonable that children would benefit from an age-appropriate understanding of personality preferences and an acceptance of differences as individual uniqueness,

rather than being good or bad, right or wrong. Various mediums, such as cartoons, discussions, stories and books like Type Tales: Teaching Type to Children can be employed to introduce the concept of type to children from roughly ages five or six on. I have used the above mentioned book and the MBTI with my own two sons, as a basis for helping them appreciate and deal with their differences and how to handle conflicts.

Limitations of Abstracting from MBTI Data and Research

As stated earlier, most of the MBTI research related to students has been conducted with college age students and junior high students with above average academic success. Thus, although the underlying assumptions may be applicable to Native and non-Native junior high school students, the results remain inferential due to the lack of normative data for these populations. A further difficulty in typology research is the use of type preferences which describe individuals for group descriptive purposes. Levy and Ridley (1987) caution against relying on results from modal personality descriptions, such as most elementary school teachers are ESFJ's. The authors contend that such classifications often inaccurately characterize the group members.

Not only may studies fail to maintain the individual focus of Jungian type theory, they may also fail to utilize appropriate sample size for a quantitative study, exemplified by Johnson (1980) who used a sample size of three. The populations used for much MBTI research are often "volunteer" psychology undergraduates, which limits the generalizability of the results. Despite the limitations, MBTI research provides opportunities for positive change in junior high school education and provides directions for future research.

Type and Academic Achievement

As the MBTI is designed for individuals from ages 11-12 and older, little research has been conducted linking type and academic achievement using the MBTI. Most of the research on type and academic achievement has been conducted utilizing the Murphy-Meisgeier Type Indicator for Children (MMTIC)(1987a). The MMTIC applies the similar Jungian typology preferences to children in grades two through eight. While there have been no correlational studies done between the MBTI and the MMTIC, the basic philosophy behind the two instruments is identical. For the purposes of discussion and review of the literature related to type and academic achievement, the results of the studies using the

MMTIC relative to academic achievement will be outlined here.

Fourqurean, Meisgeier and Swank (1988) showed that only the SN (sensing-intuition) scale was related to academic functioning. There appeared to be "a tendency for higher achieving students to prefer intuition (N) while lower achieving students tend to prefer sensing (S)" (p. 42). The results of this study are consistent with the earlier mentioned MBTI results, supporting the conception that type correlates with academic achievement similarly for adults and children.

A study by Tobacyk, Wells and Springer (1988) explored the relationship between psychological type (measured by the MMTIC) and self-concept (measured by the Tennessee Self-Concept Scale) in junior high school students at high risk for dropout. The students in the sample were predominantly E (60.5%), S (73.7%), F (48.7%), J (40.8% with 30.3% scoring undetermined on the J-P scale. The results are consistent with existing theory and research findings related to type and academic achievement. Myers and McCaulley (1985) contend that:

> Academic achievement is facilitated by (1) the ability to deal with ideas and concepts - characteristics associated more with I than with

> E; (2) the ability to deal with abstraction, symbols and theory - characteristics more strongly associated with N than S; and (3) decision-making based on logical manipulation of concepts and objects - which are more characteristic of T than with F. (cited in Tobacyk, Wells & Springer, 1988, p. 49)

The researchers in the above study reported that the junior high students at risk for dropout displayed the opposite types (E, S, F) to those linked to academic achievement (I, N, T) (p. 49).

Lathey (1991) conducted a study exploring the relationship between various measure of academic achievement and Kiersey's four temperament styles using the MMTIC in junior high students (grades 6 through 8). THE MBTI and the MMTIC "are commonly used to identify these Jungian-based temperament and learning styles" (p. 52). As reported earlier the SN and EI scales are related to academic achievement "with I and N advantageous to achievement" (p. 52). Results indicated that "non-cognitive or temperament style factors became significant in the prediction of academic achievement in early adolescence" (P. 52). Specifically, the researcher found that students who were

clearly SP on the MMTIC were at risk for poor academic achievement by grade 8.

The results of these studies with junior high school students reflect the importance of psychological type/learning style in predicting academic performance in early adolescence. More research is needed to further investigate the relationship between type and school success.

Prior to discussing Native cultural history, research in the area of Native psychological type learning style and academic self-concept, it is necessary to examine the area of learning style and the link between psychological type and learning style.

Learning Style and Psychological Type

Educators have long been aware of the different preferences students have for various methods of teaching and learning. Knowledge of those preferences affords the teacher the opportunity to enhance the effectiveness of classroom instruction. "Learning style has been linked conceptually to other non-cognitive variables such as cognitive style, temperament and psychological type (Kiersey & Bates, 1984; Lawrence, 1984, cited in Fourqurean, Meisgeier & Swank, 1990, p. 225; Lawrence, 1992). Other researchers have provided evidence to support the link

between learning style and type (Griggs, 1985; Sugarman, 1985; Lathey, 1991; Evans, Benner & Hayes, 1985; Bireley & Hoehn, 1987; Golay, 1982).

Dunn (1983, cited in Fourqurean, Meisgeier & Swank, 1990) defines learning style as "the way individuals concentrate on absorbing and retaining new or difficult information or skills" (p. 225-226). Jung's conception of psychological type classifies individuals according to their preferred manner of processing information and making decisions. Meisgeier and Murphy (1987b) proposed that psychological type in children influences how they take in information and make decisions based on that information. According to Barger and Hoover (1984, cited in Fourqurean, Meisgeier & Swank, 1990), "psychological type is descriptive of what is now called learning style or cognitive style" (p. 226).

Lawrence (1979, 1992) proposed that learning style encompasses four aspects of psychological makeup:

(a) Cognitive style in the sense of preferred or habitual patterns of mental functioning: information processing, formation of ideas and judgments.

(b) Patterns of attitudes and interest that influence what a person will attend to in a

potential learning situation.

(c) A disposition to seek out learning environments compatible with one's cognitive style, attitudes and interests, and to avoid environments that are not congenial.

(d) Similarly, a disposition to use certain learning tools and avoid others. (p. 2)

While there are some learning strategies that may change from situation to situation, there are other strategies that the individual may want to keep the same in all situations. Lawrence (1992) states that type preferences fall into the category of learning strategies that people want to keep the same. "The aspects of learning style that are a reflection of one's type can be expected to persist across situations" (chap. 2, p. 6). Lawrence has done extensive work over the past twenty years with learning preferences associated with dimensions of MBTI type. I will be using Lawrence's definition of learning style in the discussion in Chapter 5.

According to Kiersey and Bates (1978) "temperament determines behaviour because behaviour is the instrument for getting us what we *must* have, satisfying our desire for that one thing we live for" (p. 30). Kiersey and Bates proposed four temperament styles, each encompassing specific

psychological types and resultant characteristics. The Dionysian Temperament is comprised of the SP's (ISTP, ESTP, ISFP, and ESFP's, making up roughly 38% of the population) who are impulsive and desire freedom, action, variety and spontaneity while living firmly in the present.

The Epimethean Temperament consists of the SJ's - ISFJ, ESFJ, ISTJ and ESTJ, again making up approximately 38% of the population. "SJ's must *belong*" (p. 40) and feel a sense of duty and obligation. They tend to be pessimistic, desire to be useful and have a keen sense of tradition, responsibility and dedication to established social conventions.

The Promethean Temperament (roughly 12% of the population) are the NT's (INTP, ENTP, INTJ and ENTJ). Because of their relative infrequency, NT's "must live in a world that is alien" (p. 47). NT's are fascinated by power and competence and need to be seen as able. NT's tend to be self-critical, fear failure and are demanding of themselves and thus can easily fall into an all work, no play lifestyle.

The most difficult temperament to describe is the Apollonian - NF types (INFJ, ENFJ, INFP and ENFP) comprising approximately 12% of the population. As Kiersey and Bates (1978) state: "Where the others...pursue ordinary goals,

the goal of the Apollonian cannot be seen as other than extraordinary" (p. 51). The NF "hungers for self-actualization" (p. 59) and "his purpose in life is to have a purpose in life" (p. 58). NF's need to make a difference in the world and to act with integrity and unity. NF's "prefer to work with words and need and want to be directly or indirectly in communication with people" (p. 63). NF's tend to show others what they want to see and feels himself caught "in a split of awareness, he is always on stage and, at the same time, is watching himself being on stage." (p. 63) NF's seek relationships and interaction.

Golay (1982) described four learning styles (Actual-Spontaneous, Actual-Routine, Conceptual-Specific and Conceptual-Global) that he felt corresponded to Kiersey and Bate's temperament styles (Dionysian, Epimethean, Promethean and Apollonian respectively). Each style had distinctive learning characteristics. The MBTI and MMTIC "are commonly used to identify these Jungian-based temperament learning styles" (Lathey, 1991, p. 52).

Several studies (Lawrence, 1984; McCaulley & Natter, 1974, cited in Fourqurean, Meisgeier & Swank, 1990) explored the link between psychological type as measured by the MBTI and learning style as measured by the "Learning Style Inventory (Dunn LSI) (Dunn, Dunn & Price, 1978) and the

Renzulli-Smith Learning Style Inventory" (Renzulli & Smith, 1978, p. 227). Fourqurean, Meisgeier and Swank (1990) explored this same link using the MMTIC with grade nine students. The results of this study indicated "the presence of two bipolar learning preference dimensions" (p. 235). One dimension postulated a need for some students to work passively (introversion), while other students need active engagement with others (extraversion)in the learning process. This dimension corresponds to Jung's E-I preference and Kolb's active-reflective dimension of learning style (Griggs, 1985).

> The second bipolar dimension suggests a structure -motivated dimension contrasted with a need for an unstructured, casual learning style. Holland (1982) cites the need for structure as a crucial element in learning style and defines structure as the need for frequent supervision and guidance in the learning process. (Griggs, 1985, p. 235)

This dimension corresponded to Jung's JP preferences (a "structure-motivated dimension contrasted with a need for an unstructured, casual learning style" p. 235) and Kolb's concrete experience-abstract conceptualization dimension.

In spite of the high statistical significance of the results supporting a conceptual link between psychological

type and learning styles, Fourqurean, Meisgeier and Swank (1990) caution that while learning style and psychological type may be linked conceptually, they may not be measuring the same construct and recommend further research in the area. However, they also point out that teachers may be assisted in making decisions about lesson design, task assignments and classroom environment through an awareness and understanding of students' scores on the EI and JP scales.

Lawrence (1984) provided a synthesis of more than 100 published research studies involving the MBTI in examining learning, teaching and academic aptitudes. Lawrence found that 25% of the reports gave indirect evidence of learning style preferences and a further 25% actually "tested and refined learning style constructs" (p. 2).

The MBTI Manual (Myers, 1962) reports validation studies of the correlations between MBTI preference scores and various other instruments, including the Edwards Personal Preference Schedule (EPPS), the Personality Research Inventory, 16 PF, Allport-Vernon Lindzey Study of Values (AVL), the Opinion, Attitude and Interest Survey and others. The correlations obtained "are fully consistent with Jung's theory and Myer's description of the types" (Lawrence, 1984, p. 2). Further discussion of the

implications of learning styles for classroom situations will be discussed in Chapter 5.

Native Culture and History

Prior to an examination of Native learning style it is necessary to discuss Native culture and history as they relate to personality development and education.

Much literature is available on Native culture (Heinrich, Corbine & Thomas, 1990; Thomason, 1991, Carlson, 1975; Trimble, 1981; Bride 1971 cited in Heinrich, Corbine & Thomas, 1990, to name but a few). However, I have chosen to focus on the current review by Ross (1992) as it appears to be more reflective of Canadian Natives and is written in seemingly less judgemental language.

It is impossible and impractical in a presentation such as this to provide in-depth coverage of such a large topic as Native cultural history. There is simply too much that could be said. What I will focus on are the areas that have relevance to my topic of study - Native beliefs, values, traditions and child-rearing practices that are relevant to development and education.

In 1805, Red Jacket, the spokesman for the Six Nations, listened to the missionaries who were pressing the Indians to forsake their culture and uncivilized ways and to follow the way of the Bible and white man's ways. Red Jacket

rejected the missionaries appeal. His words to them had great impact, both then and now: "Kitchi-Manitou has given us a different understanding" (Ross, 1992, p. vii). To the Native peoples, the word different does not imply better, or worse, it simply means *different* - not the same as. "It was quite clear even then that the notions, ideas, beliefs, institutions, insights, opinions, aspirations, concepts, customs, habits, practices, conventions, outlook - the entire tradition and way of life - that they embraced were different from those held by the newcomers" (Ross, 1992, p. vii).

It appears that the "white man" has been trying to civilize the Native people, to conform to white man's values, beliefs, customs, institutions, etc. for over 400 years and has failed to recognize the difference and uniqueness within Native culture. Jung espoused individual differences, encouraging understanding, tolerance and acceptance of others' differences. Can this view not be extrapolated to encourage tolerance, acceptance and understanding of cultural differences? Possibly today there are the beginnings of tolerance and acceptance as Western civilization begins to appreciate the contributions of Native culture and tradition, as well as contributions from the Far East. "Red Jacket was saying in just another way

that his people's understandings possessed the same weight as those of others" (Ross, 1992, p. viii).

While the Native people as a group espoused these different understandings and shared common beliefs and heritage, "that tradition also enabled any individual to declare 'Kitchi-Manitou has given me a different understanding'" (Ross, 1992, p. viii). Thus, for the Native individual there is a dual public and private nature to the understandings, which because of their origins from Kitchi-Manitou, gave them a sacred aspect, worthy of respect. The individual differences in perceptions and understanding were supposed to further enhance personal as well as general knowledge. "Men and women were expected to weigh, not reject outright, opinions different from their own, and to clarify their own ideas and enrich their general understanding" (Ross, 1992, p. viii). It is rarely easy for anyone, Native or otherwise, to reject or abandon one's own beliefs or opinions in favour of another's beliefs, even when those opinions or beliefs may be superior to one's own. How difficult it must be for the Native peoples to be expected or encouraged "to disown their cultural heritage when they can see that it is as substantive as the competing one, and still has meaning, application and purpose" (Ross, 1992, p. viii).

Kitchi-Manitou was God, "super-ordinate to human experience knowledge and description" (p. x), creator of the universe and everything in it, both corporeal and incorporeal. Creation was viewed as an act of generosity, laying the foundation for the Native "belief in the essential goodness of intent of human beings" (p. x) and generating a sense of "worth, equality and pride" (p. x) within each individual. According to tradition, Kitchi-Manitou planted a seed of talent within each Native's being, to be sought after "through dream and vision...(to) enhance his being and his world and his sphere with it in emulation of Kitchi-Manitou" (p. x). The process of fulfilling a vision is not an easy task for anyone to accomplish, beset as one may be by human weaknesses like fear, anger, lust, deceit, selfishness, impulsiveness, etc. Native belief contends that individuals who have lost their way and have caused harm or pain to others, have "been led astray by malevolent manitous" (p. xi). According to Native belief, what was needed was a helping hand and guidance and, if the person had done serious harm, purification in a sweat lodge and asking the manitous for good dreams and visions.

In the Native hunter society everyone contributed and no one was considered inferior to another. A sense of pride and worth came from service to family and community.

Isolation was seen as the way for a Native male or female to show that he/she was as good as any other. "To face and surmount similar challenges and tests alone, without aid, was the measure by which men and women judged others and loved to be judged" (p. xii).

According to Native tradition, "the best one can do is to tell what one knows with the highest degree of accuracy. Beyond this one cannot go." (p. xii). Thus, absolute truth does not exist for those who hold this belief. Speech and credibility were intimately associated. For the Native individual, careless words can break the trust and confidence that had been awarded to the speaker. How often did the white man "speak with forked tongue" to the Indians thereby breaching the bond of trust and confidence? Native heritage holds the view that people are inherently good. Western culture has mixed opinions - supporters of Freud contend that people are inherently bad/evil; supporters of Rogers and others claim humans are inherently good. The two cultural perspectives are certainly different: "while we share with Native people a common desire to live healthy, love filled and peaceful lives, we share very few concepts about *how* to accomplish those goals" (p. xxii). The two cultures appear divided by a wide gap.

Like other peoples around the world who share a hunter-gatherer lifestyle, the Native "belief system centered upon the existence of a spiritual place lying parallel to, and interacting with, the physical one" (p. xxvii). According to Ross (1992), it is imperative to gain an understanding of the Native belief system and its impact on everyday life, in order to gain an understanding of Native reality.

In his book, Dancing with A Ghost: Exploring Indian Reality, Ross (1992) retells a story of a Mohawk band that invited a Cree band to participate in a sports tournament. The Mohawks, being an agricultural people, traditionally set out more food than their guests could possibly consume, as a show of their wealth and generosity. The Cree are a hunter-gatherer society to whom scarcity was common. Their custom entailed always eating everything put before them as a show of respect for the hunter and his generosity.

In the story a problem develops when the two sets of customs come into conflict. The Cree ate until they were uncomfortable, as a show of respect, while believing the Mohawks were insulting them. The Mohawks thought the Cree were intent on insulting them. Ross uses this story to illustrate the difficulties of being different:

> The significant point is that each group believed that the other was *intentionally* being insulting

> and disrespectful when, in fact, each group had been going to great pains (especially the Cree!) to show exactly the opposite. The problems lay in the fact that each group could only see the other through its own rules, could only interpret the behaviour of others from within their own perspective.
>
> Acts are never merely acts. They are also signals of attitude. Those signals, however, are often culture specific. When acts are seen, but their signal-content misinterpreted, it is impossible to avoid forming inaccurate representations of others. Until we understand what particular acts *mean* to the other, we will continually ascribe motivations and states of mind which are well off the mark. Ross, 1992, p. 3)

I used this extensive quote to illustrate the point that not only in communication and interaction with people of different cultural background, but even within our own communities and especially within our own families, each person sees and hears from his/her own perspective, or personal context. It is as if we all wear our own special glasses to view the world and our own special hearing aid to hear others. Only when I can take off my glasses and hearing aid and say to the other person "This is what I am

seeing, hearing and feeling. Please tell me what you are seeing, hearing and feeling" will progress be made in narrowing the gap between individuals and cultures. Only then will understanding, tolerance and acceptance of others develop. Effective communication and active listening are crucial elements in fostering a change in attitude. Ross provides further explanation:

> Until you understand that your own culture dictates that you translate everything you see and hear, you will never be able to see or hear things in any *other* way. The first step in coming to terms with people of another culture, then, is to acknowledge that we constantly *interpret* the words and acts of others, and that we do so subconsciously but always in conformity with the way in which our culture has taught us is the "proper" way. The second step involves trying to gain a conscious understanding of what those culture-specific rules might be. Until that happens, it is impossible for us to admit that our interpretation of the behaviour of someone from another culture might be totally erroneous. (Ross, 1992, p. 4)

The nature of the task is: "Learning to get beyond what we think we see and hear to ask what a person from a

different culture and with a different sense of reality is truly trying to tell us" (p. 5).

Ross (1992) identifies five "ethics" or principles that he found central to the conduct of Natives in traditional times and to a certain degree remain important today. These include:

1. **The Ethic of Non-Interference**

Central to this principal is the belief that a Native not interfere with another person's rights, activities or freedom in any way. "Interference in any form is forbidden, regardless of the following irresponsibility or mistakes that your brother is going to make" (Ross, 1992, p. 12). This means that a Native does not like to confront people, to give advice unless it is asked for, to comment or interfere with another person's behaviour, or to impose consequences. As well, lying is a serious offense. From the Native perspective, disclosure and acknowledgement of one's wrong doings are seen as a "step towards rehabilitation and integration into the community" (Ross, 1992, p. 14). For Native society there appears to be nothing similar to the white man's "right to silence" (p. 14). This ethic also prohibits criticism of another to his face, as well as it being wrong "even to think critical or angry thoughts about one's family" (p. 14). Thus our court

system, our mental health system and likely a myriad of other "civilized" systems place the Native in direct opposition or contradiction to his cultural beliefs and experiences.

This ethic has a dramatic effect on child-rearing and education. The Native parents "let their children decide what is to be so in everything, from bedtimes, clothing and school attendance to selection of friends and eating habits" (p. 16). Native children learn on their own by watching and "emulating what they see" (p. 16.) This could be called the "modeling" approach to education, with "no praise or punishment, no withholding of privileges or promising of rewards" (p. 16). The Native child is expected to watch closely and constantly and to learn on his/her own.

The ethic of non-interference could play havoc with school attendance, since the child is allowed to decide for himself whether he will go to school. Unlike non-Native parents, who tell their children what to do and how and when to do it (as a show of love and caring), Native parents show their caring by allowing their children to make their own choices. Such being the case, the Native school used in this study has moved the traditional 8:40-8:45 a.m. start of classes to 9:30 a.m. to ensure greater school attendance and

to allow time for the provision of breakfast to the students.

The conflicting cultural roles and values between Native and non-Native are not clearly understood by the average person. Non-Native Canadian culture dictates that parents raise their children in a fashion of ever increasing responsibility in order "to promote the successful *departure* of our grown children into wholly autonomous lives" (Ross, 1992, p. 19). This is in direct contrast to traditional Native parents whose goal is to always have their children around them. The children become "integral, as opposed to autonomous, parts of it (the family), they remain that way for the rest of their lives " (p. 19). This goal of maintaining an interdependent family raises difficult choices for Native parents when faced with educational opportunities and decisions for their children. Pursuing greater education immerses the child in non-Native society, a society which fosters autonomy rather than interdependence.

The ethic of non-interference also applies to advice giving. Native culture deems advice giving inappropriate, even when it is asked for, "barring interference in the choices of others" (p. 20). This supports the belief in not expressing opinions directly. The chosen approach is one of

recitation, repetition and subtle emphasis on the facts that led to the preferred decision or conclusion. The listener can then arrive at his/her own conclusion. This process is basically consensus decision-making leading to a communal decision. This group decision is arrived at without loss of face to anyone by having his/her opinion rejected, minimized, or "bested" by another person or being forced to give in. As Ross (1992) points out, "the maintenance and nurturance of each individuals' self-esteem seems a paramount duty" (p. 24). It appears to be better to suffer loss and inconvenience to oneself rather than confront another person about their error. This process allows everyone to save face and maintain their self-esteem. Problems may arise when a Native child (or adult) is placed in a situation that is non-Native, such as a school, court, counselling session, etc. and then is asked leading questions. He or she may respond by telling the questioner what the questioner wants to hear, rather than what actually happened.

2. **The Ethic That Anger Not Be Shown**

Being a hunter society, living in close community with so many other people required that anger and hostile emotions be restrained in order to preserve the cohesion of the family, group or tribe. "There was a sacrifice of

individual feelings and their expression and discharge for the sake of group unity" (p. 29). According to Ross (1992), it seems that the prohibition against anger applies to other feelings, especially sadness, grief and sorrow. These emotions had to be forgotten as quickly as possible and the dead person's name not mentioned "so as not to remind people of their loss" (p. 30). This Native tradition, too, is in conflict with the white man's way of showing grief and loss.

"The prohibition against emotional indulgence appears to be even wider in scope and to include talking about, or even *thinking* about, one's own confusions and turmoils" (p. 32). It is apparently not "right" or acceptable to talk about one's personal problems. Again, this is in marked contrast to white mainstream culture, where one is bombarded with self-help articles, books and TV talk shows telling us how to explore, talk about and share our deepest problems and feelings.

Native tradition "forbids the burdening of others" (p. 33) with one's own problems so the other person will not feel obligated to respond. Even individual focus on one's own feelings is discouraged. This cultural belief and tradition can pose problems for the non-Native teachers, lawyers, counsellors, psychologists, etc. who work with Natives and who view the Native person from a white man's

perspective, resulting in labels such as "unresponsive", "undemonstrative", "uncooperative" being placed on the Native. Naturally, the Native person refused to "cooperate" by pouring out his deepest feelings and thoughts - that is what he/she has been taught was proper. Again, the clash of the two cultures is inevitable if one cannot begin to see the differences and the beliefs underlying the differences without judgement.

3. **The Ethic Respecting Praise and Gratitude**

In Native culture, the traditionally appropriate way to show appreciation was to ask the person to continue with his contribution, instead of offering verbal praise. According to Ross (1992) "sharing and the expectation of both effort and excellence" (p. 35) are central tenets of Native Canadian life, because without them the family's or tribe's safety and security would have been at risk. Native society is not based on "try and try again", because resources were too limited to allow "practice". This lends support to the Native method of learning by careful and repetitious observation in the real-life context, "until the child came to thoroughly understand all aspects of a particular task" (p. 35). This approach is consistent with mental rehearsal.

4. **The Conservation-Withdrawal Tactic**

The mental process of thinking things through before acting was vital in situations of danger and stress. Quick or ill-thought out decisions could lead to injury or death. Thus, in times of stress, the Native would fall silent and still, to conserve both physical and psychic energy, and to think out the best course of action. This response is likely to occur in almost all situations which are felt to be unfamiliar or threatening. A non-Native often reacts to stress with frantic activity, losing energy and presence of mind. "If we're stressed, we fall back on action" (p. 36).

5. **The Notion That The Time Must Be Right**

The hunter-gatherer had to wait patiently until the time was right, to hunt and to gather food. They prepared while they waited for the optimal time, when they would act with great stamina and energy.

> The notion of 'the time being right' is therefore not some mystical or metaphysical construction, but a practical down-to-earth survival tactic. Nor is it a "minor" custom, for it is inextricably bound up with the expectation of excellence and the folly of unconsidered response. It involves not only taking the time to walk through possible courses of action in advance but also preparing one's self

> emotionally, and spiritually, for the course chosen. It also requires *not* acting until there is a conviction that the task can be performed successfully. (p. 38-39)

Successful activity required optimal physical, mental and spiritual preparation, for the time to be right for success for the group enterprise. "People saw their own importance only in terms of the group...they were required to deny themselves the luxury of indulging individual egos" (p. 39).

Spirit and prayer play a major role in Native life, reflecting commonality and goodness as human beings working towards common goals and asking that we treat each other and the planet respectfully (Ross, 1992). "This simple reminder of the good that is in each of us, of the good that we can each contribute and of the good fortune that surrounds us, prompts real effort at patience, understanding and cooperation" (Ross, 1992, p. 40). Contrast this belief with the mainstream culture's focus on individual rights (often at the expense of others) and the pursuit of individual happiness.

As the Native and non-Native peoples have become more entwined culturally, many negative conclusions have been reached about Native behaviour and action. As Ross states:

> Rather than assuming that their behaviour stems from principles similar to ours, then judging that behaviour badly because it does not conform to our own typical behaviour, we must realize that their behaviour is different because it flows from different basic principles. We are not seeing, despite what we *seem* to be seeing, a people who don't care if their friends make dangerous mistakes or if their loved ones fall into self- destructive habits, who don't care about the peace, health and security of their communities. We are instead seeing people whose traditional commandments require that they demonstrate their care in two ways which are fundamentally different from our ways: by conferring virtually absolute freedom on everyone and, when damaging events do occur, by doing whatever is possible to put those events behind them, to let bygones be bygones and to restore essential harmony. (p. 42-43)

Natives, like us, have <u>learned</u> to act in specific ways. Given different experiences each culture might have learned to respond differently. Native people are being forced to examine their traditional beliefs about child-rearing now that they are exposed to urban influences. According to

Ross (1992), "the central preoccupation of Native people today is with making decisions about which traditional commandments should be carried into the future with full force, which should be modified (and in what ways), and which should be discarded altogether" (p. 44). Traditionally, Native peoples have maintained a respectful silence about mainstream cultural ways, even when we have tried to force our cultural values and beliefs on them. However, based on incidents throughout Canada in the past few years (Oka, etc.) it would appear that Native people have decided they have had enough and "are asking us to leave them alone" (p. 45). The Natives do not condemn our system as being wrong, only as being wrong for them and hence are asking for self-government.

Whereas white society as exemplified by our judicial system is concerned with what people do, Native society ignores what was done and "concentrates instead upon the personal or interpersonal dysfunctions which caused the problem in the first place" (Ross, 1992, p. 46). Native society focuses on trying to correct the dysfunctions, in contrast to white culture which focuses initially on preventing the dysfunctions from "erupting into further harmful or illegal acts" (p. 46).

Native culture embodies a strong belief in the spiritual plane. Ross (1992) postulates that while we see the universe through the glasses of science, Native people view that same universe through the glasses of spiritual belief. Perhaps it is this belief in spirits ordaining one's faith that allows Native people to accept the ups and downs of life without anger or complaint. Ross (1992) notes the absence of blame in Native tradition. Ross defined blame as "the supposition that the other person could have avoided his harmful act in the first place" (p. 61). If the Native philosophy is that people "behave the way they do because they are to varying degrees the instruments of outside forces" (p. 61) then the issue of blame and forgiveness becomes more of a non-issue. In a statement to the Ontario Government by the Sandy Lake Band, the Elders wrote:

> In the non-Native society, committing a crime seems to mean that the individual is a bad person and must be punished.... The Indian communities view wrongdoing as a misbehaviour which requires teaching, or an illness which requires healing. (p. 62)

Native culture thus opposes jail and any other form of punishment, preferring to focus on counselling and teaching,

including some form of compensation or restitution when appropriate. Native culture is almost devoid of expressions of praise or gratitude, again reflecting the Native belief that one's interaction with the spirit world determines one's choices and behaviours. If this is the case, "then notions such as praise and blame or reward and punishment no longer make sense" (p. 63) when working with Native individuals. Yet white culture appears to use praise, reward, punishment and censure as motivators to influence one's choices and behaviours. If those same methods are used to motivate a Native child in the classroom, they will likely have a dubious effect, possibly even a negative effect.

It would appear that some of the cultural differences between the two societies may be partly due to the differing views about the nature of the universe - one scientific, leading to belief in control over the environment, and one supernatural, leading to a belief in being part of creation and the environment. What seems coincidental is that now, the growing awareness of the fragile nature of the world's ecosystems may be heralding a conversion to the more harmonious Native approach to the environment involving accommodation and respect, rather than manipulation and mastery. Native culture places a major emphasis on the idea

of seeking and receiving guidance and thus emphasizes developing observational skills, which can then be used to predict and determine one's actions. This can lead to making decisions because "it just feels right" as compared to making logical, rational decisions based on a series of facts. Ross (1992) refers to this concept as "felt knowledge" (p. 81) and claims that "a people whose knowledge is 'felt' knowledge, sensory knowledge, will look at the world very differently from those whose knowledge is primarily intellectual; this difference may be central to the Native concept of a spiritual plane" (p. 81).

I found myself moved to tears and experienced an inexplicable sense of longing when reading Ross's description of the Native view of existence as circular and revolving, rather than evolving and linear thus advocating "walking softly across the landscape" (Ross, 1992, p. 96). I find it sad to live in a world where I must "shut down my senses to control the degree of stimulus they are subjected to" (Ross, 1992, p. 93) rather than maintain a position of openness and curiosity.

The dilemma for Native and non-Native cultures today seems to center around a willingness/unwillingness to adapt to the other culture, as each struggles to determine what values and beliefs to hold steadfast and what values and

beliefs need to be altered to accommodate to the changing times. This will require much understanding and much cooperation and planning to allow for the integration of the two cultures.

Natives have faced a sudden shift from isolated extended family residence to sudden housing developments forced upon the people by the government, resulting in a severe restriction in their freedom of choice. "Native people face the double challenge of rediscovering who they once were and then trying to adapt that to the reality of where they are now" (Ross, 1992, p. 115).

"Native approaches may succeed in reminding us of how far we have strayed from notions and collective responsibility and the universal brotherhood of man" (p. 162). According to Ross (1992), Native belief holds that:

> all of life is a process and every person is a thing which is becoming" as opposed to a "thing which is". From this perspective, no one can be written off because of what they did at a particular moment in time. Instead, since each person is always 'someone-in-the-making' it becomes everyone's duty to assist in that process. (p. 164).

The Native focus on the present and the future, the restoration of internal harmony, and the compensation and restoration of peaceful relations, is part of a belief in the inherent goodness of human beings. With the white society's focus on punishment and threat, do we as a culture see people as inherently bad? Where is the inter-connectedness stressed by Native philosophy?

Viewed by Ross (1992), "the challenge for Native people lies in choosing what they wish to adopt, what they must adapt to and what they must either retain or restore to its original purity" (p. 185).

Heinrich, Corbine and Thomas (1990) and Sanders (1987) present tables comparing the value orientations of contemporary American society and Native values, the composite of which is presented in Table 1.

Table 1. **COMPARISON OF VALUE ORIENTATIONS**

Contemporary Anglo-American Values	Traditional Native American Values
Subjugation of nature	Harmony with nature
Future, progress, change	Present, follow the old ways
Competition (each person maximizing own welfare will maximize the general welfare)	Cooperation; conscious submission of self to the welfare of the tribe
Private property, acquisition	Sharing freely, of wealth working only for present needs
Fame, recognition	Anonymity, humility
Reliance on experts	Reliance on extended family
Verbal expression	Keeping to oneself
Analytic	Holistic
Speak louder and faster	Speak softly, at a slower rate
Address listener directly often by name	Avoid speaker or listener
Interrupt frequently	Interject less
Use verbal encouragement	Use less encouraging signs (um, nod head)
Use immediate response	Auditory messages treated differently-delayed responses
Verbal skills highly prized	Non-verbal communication
Competition	Cooperation
Personal goals important	Group needs more consideration
Plan for future and how to get ahead	Present goals considered important - future accepted as it comes
Power over nature	Harmony with nature
Control of others	Try to control selves, not others
Blame one person at cost to others	Discipline distributed among many - no one person takes blame

Future time oriented	Present time oriented
Acquisitiveness - material comfort and saving for future valued	Encourage sharing and keeping only enough to satisfy present needs
Trial and error learning with new skills practiced until mastered	Participation after observation - only when certain of ability - considered best
Need to control and affect others	Privacy and non-interference valued
Self-expression and self-disclosure	Self-discipline in body and mind
Concerned mostly with facts	Emotional relationships valued
Physical punishment accepted	Physical punishment rare
Aggressive and competitive	Patience - allowing others to go first - encouraged

From: Heinrich, Corbine & Thomas (1990, p. 129-130)

Perhaps the most appropriate way to summarize this attempt to understand Native culture, values and beliefs is to quote the Native School Creed:

> We, the family of XXXXXXXXXX School, believe that our thoughts and behaviours begin with love and that this love emanates spirituality, caring and self-esteem.
>
> We recognize and respect that all life has worth and dignity.
>
> We all have a responsibility to assist each other in our continuing journey of wisdom. While we have responsibility for ourselves, others and our community, we recognize the necessity to balance this by enjoying, sharing and celebrating the life given us.

Native Learning Style

The process of learning is complex yet versatile, since people are born with the potential for learning in a variety of ways. However, "they seem to develop only a part of that potential designing their own unique styles of learning by selecting from the range of cognitive possibilities available to them" (Browne, 1990, P. 23).

"Recent research and teacher observations indicate important differences in learning style between Indian

students and their non-Indian counterparts" (More, 1984; Karlebach, 1984; Williams, 1986, cited in Moore, 1987). The study of learning styles arose from the study of individual differences, one of which is cultural differences. As Moore (1987) points out, "people who share a common cultural background will also share common patterns of interests, thinking styles and learning styles" (p. 26). The research strongly suggests that learning style differences of Native Indian (and other) students are related to different background experiences, different value systems and different ways of raising children, not to racial or genetic differences (Moore, 1987).

The behaviour and activity patterns to which Native children are exposed have their roots in a number of important values, such as generosity and sharing, cooperation and group harmony, and placidity and patience. They also have different behavioural expression, different concepts of time and different values of ownership and property. According to Pepper and Henry (1986), these values are learned in an informal fashion, and are unconsciously applied.

Minimal direct research on traditional Native learning styles has been conducted, according to Moore (1987). Historically, legends and stories, symbolism,

anthropomorphism (ascribing human characteristics to animals, gods and objects), animism (ascribing life and soul to rocks, trees, wind, etc.) and metaphors were used as effective methods of teaching complex concepts. These methods allowed the individual to learn and understand at his/her own level of cognitive and emotional development (Moore, 1987).

Within the family, child-rearing practices play an important role in learning style development. Observation (watch-then-do) was the prime method utilized in the acquisition of skills. The Native philosophy of child-rearing is self-exploratory rather than restrictive. According to researchers, Native children are allowed to explore and be independent as early as possible, thus having the opportunity to learn from their mistakes (Pepper & Henry, 1986; Moore, 1987; White, 1986). In this manner, Native children learn self-discipline as a natural result of their traditional child-rearing practices, while European and North American children have to be taught self-discipline later in life (Pepper & Henry, 1986). Native children are given the freedom to make many of their own choices and decisions and thus have the opportunity to become self-directed and self-reliant. Native children regard non-interference by parents and others as normal,

since a high value is placed on individual dignity, personal autonomy and non-interference in the lives of others. Misbehaviour is often ignored so the child "would learn the natural consequences of misbehaviour and learn to be in charge of his or her own behaviour" (Moore, 1987, p. 31).

The Native child is usually regarded as a revered member of the family and is welcome at all types of family and community affairs. Therefore, the extended family and elders play an important role in learning.

Communication, both verbal and non-verbal, is an important part of learning styles. Non-verbal communication is far more important in Native culture than in contemporary North American culture. Silence, eye contact and quiet calmness were effective means of communication and discipline in Native society. Since most of the communication was non-verbal, depending on observation on the part of the child, "children were not tested or questioned after a learning situation - they were expected to self-test" (Phillips, 1972; Scollon & Scollon, 1983; Erikson & Mohatl, 1982, cited in Moore, 1987). In the North American family, language, via question-asking and verbal interaction, is almost the exclusive means of exchanging information and as a vehicle for learning (Pepper & Henry, 1986).

Pepper and Henry (1986) suggest that the dramatically different child-rearing practices - "one stressing observational learning and another emphasizing learning through verbalization - has fostered the development of very different styles of learning among Indian and European-American children" (p. 51). These differences in learning styles have major consequences for the Native student in the classroom, in light of the fact that the formal educational process in the school favours those who are highly verbal. There are very few observational learning opportunities in the classroom.

Purpose Of The Present Study

The purpose of the present study was fourfold: 1) to determine if there are cross-cultural differences in personality type/learning styles between Native and non-Native junior high school students; 2) to determine if there are significant gender differences between males and females to warrant separate data analysis; 3) examine the methodology and implications for effective cross-cultural research using the MBTI; and 4) to explore the implications of personality type on the educational process with the junior high school population.

The study will explore the nature or pattern of the findings and will review the potential educational

implications of the findings with the Native junior high school students.

The sample groups used in this study consist of: 1) non-Native junior high school students from two Edmonton Elementary-Junior High Schools; 2) Cree junior high school students from an entirely Native school in Edmonton; 3) CAPT-MBTI Date Bank traditional age male junior high school students; and 4) CAPT-MBTI Data Bank traditional age female junior high school students.

Research Questions

1. Are there sufficient significant differences between males and females in the three samples to warrant separate data analyses on the basis of gender?
2. Is there a Native modal type and/or most frequent type?
3. What, if any, are the most frequent type and modal type differences between the Native sample and the non-Native samples?
4. What is the nature of the psychological type preference differences between the sample groups?
5. Are there cultural differences in terms of type preferences between the three sample groups?
6. What are the potential implications for the conducting of cross-cultural research?

7. What are the potential educational implications of such psychological type preference differences?

III. METHOD

Native Subjects.

The Native subjects were 119 Cree students (consisting of 66 males and 53 females ranging in age from 11-15 years) in grades 7, 8 and 9 at an exclusively Native junior high school in a lower socioeconomic urban area in Edmonton, Alberta. The school focuses on retention of Native Cree traditions, values and customs. The majority of the Cree students come from rural areas and reside with relatives or friends in the city during the week or the school term, and return home on weekends or school holidays. All students present on the day of testing (N = 119) were invited to participate in the project. Twelve students (4 males and 8 females) chose not to participate or did not complete the MBTI. Thus, ten per cent of the original total sample were excluded from the analysis (6.1% of the males and 15.1% of the females). Of the total sample size of 107 students there were 31 grade 7's (14 males and 17 females, mean age = 12.4); 42 grade 8's (26 males and 16 females, mean age = 13.5); and 34 grade 9's (22 males and 12 females, mean age = 14.4).

Non-Native Subjects.

The non-Native sample consisted of 174 junior high students (99 males and 75 females) in grades 7, 8 and 9 from

two Edmonton, Alberta schools. Data from the two schools were combined to increase the sample size. Both schools were from lower middle-class urban areas. The age range for the groups was also 11-15 years. Again, all students present were invited to participate. Fourteen students (8 males and 6 females) chose not to participate or failed to complete the MBTI. This resulted in a seven per cent decrease in sample size. Of the total 174 students remaining, there were 61 grade 7's (34 males, 27 females, mean age = 12.1), 69 grade 8's (44 males, 25 females, mean age = 13.1) and 44 grade 9's (21 males, 23 females, mean age = 14.0).

CAPT Data Bank Sample.

A further comparative sample was obtained from the CAPT-MBTI Data Bank traditional age junior high school students. The sample consisted of 256 male and 321 female junior high school students who completed the MBTI (either Form G or F).

Instruments

The instrument used to identify the psychological type preferences of the students in this study was the Myers-Briggs Type Indicator (MBTI) Form F (Briggs & Myers, 1976). The MBTI reflects the way individuals prefer to focus their attention, gather information, make decisions and generally

approach life. As stated previously, the MBTI Form F is a self-report inventory for individuals from ages 11-12 through adult and consists of 166 items requiring a choice from two options. The MBTI requires 30 - 45 minutes to complete and produces a type preference on four bipolar scales: Extraversion-Introversion; Sensing-Intuition; Thinking-Feeling; Judgement-Perception.

Procedure

All students present who participated in the study were given the MBTI-Form F. Prior to the testing, each teacher was given a letter outlining the procedures to be followed when administering the MBTI. These instructions were reviewed with each teacher on the day of the testing.

Testing was conducted in the Fall of 1992 at three junior high schools over a one week period, at the same time in the afternoon. In all cases, students remained in their homerooms and were supervised by their teacher. Students completed the information section of the MBTI after which the teachers read the test instructions aloud. The researcher was always available to answer queries from teachers, monitor progress and collect completed tests.

There were no apparent difficulties experienced by the students in understanding the instructions or in understanding or answering the questions on the MBTI. The

students appeared to cope with the reading level of the instrument.

Ethical Considerations

Each student was given a three digit identifier code, which was later expanded to nine digits to include school, age, grade, gender and ethnicity to assist in data analysis. The two non-Native schools requested that students include their names. At the Cree school, the principal felt that the students would be more open and honest in their answers if they could respond anonymously. Thus, Cree students were not identified by name.

One of the non-Native schools required parental consent prior to the student participating in the study. This consent was obtained in writing (from parents who returned signed consent forms) and verbally (through phone contact by one of the teachers the evening before the data was to be collected). See Appendix A.

At the second non-Native school, as at the Native school, all students present on the day of the testing were invited to participate in the research project.

The researcher met individually with the principals of the three schools to explain the purpose and procedures of the study. Each teacher involved in the project was given a letter outlining the directions to be given to the students

and the procedures to be followed. These instructions were reviewed with each teacher on the day of the testing.

All of the subjects were informed that the MBTI results would be used for research purposes. The students were told that they were free to withhold their participation in the study at any time. The researcher was available to address concerns or questions, both in person and by phone. The students were thanked for their participation "in helping me complete my research" and letters of thanks were sent to the principals and staffs of the three schools involved. A letter of commendation was sent to one school board regarding the excellent participatory attitude of the students from the Native school. See Appendix B.

Analysis

All protocols for the Cree and non-Native samples were hand-scored according to the MBTI templates. The results were then analyzed using the Selection Ratio Type Table (SRTT) PC Program (Granade, Hatfield, Smith & Beasley, 1987) which utilizes Chi-square analyses or Fisher's exact probabilities.

Results indicating MBTI type preferences can be put into standard 16 cell type tables for ease of data comparison and analysis. The SRTT compares one type table with another to determine if there are any significant

differences in the four-letter type or in 32 other combinations of the letters. The type table displayed on the SRTT printout is called the sample table and is compared to a base population table which is not shown. The SRTT program also allows for independent and dependent sample analysis. In this study, when males and females were compared for gender analysis, the males were the sample group and the females were the base population. Thus, the results shown in the SRTT table are for males.

Each cell of the type table indicates the four letter MBTI type, the number of that type in the sample, the percentage of that type in the sample, and the Selection Ratio Index (I). The Index of a type is the percentage of the type in the sample divided by the percentage of the type in the comparison base population. If the I value is greater than one, the proportion of the type in the sample is greater than the proportion in the base; if the I value is less than one, the proportion in the sample is smaller than the proportion in the base.

"Statistical significance of the ratios is established through a series of 2 x 2 chi-square calculations with one degree of freedom. If cell frequencies are five or less, the SRTT program computes a Fisher's exact probability instead of a chi-square" (McCaulley, 1985, p. 50). Fisher's

exact probability is very conservative and according to Moody (1992), "if the Fisher's Exact Probability is .05 you can be confident that the significance is probably even slightly better" (p. 14).

Type table comparisons were obtained for the following samples:

1. CAPT males compared with CAPT females
2. non-Native males compared with non-Native females
3. Cree males compared with Cree females
4. Cree males compared with non-Native males
5. Cree males compared with CAPT males
6. Cree females compared with non-Native females
7. Cree females compared with CAPT females

IV. RESULTS

Prior to discussion of the results, it is important to clarify the definitions of most frequent type and modal type being used here. ***Most frequent type*** refers to the individual type table typology which has the highest frequency of occurrence; whereas ***modal type*** refers to the most frequent response on each preference over the whole group.

The data was analyzed for both for gender and cultural differences. Gender effects will be discussed first, then Cree and non-Native differences, and finally, implications of these findings.

Research Question 1

Are there sufficient significant differences between males and females in the three samples to warrant separate data analyses on the basis of gender?

CAPT males vs. CAPT females.

The CAPT-MBTI Data Bank provides separate data tables for male and female junior high school students. A comparison of CAPT males (N = 256) with CAPT females (N = 321) revealed many significant gender differences at the .05, .01 and .001 levels in almost all areas except S and N. See Table 2.

Table 2. **Comparison of CAPT Males vs. CAPT Females**

Junior High Study

CAPT Males (N=256)

compared with

CAPT Females (N=321)

ISTJ	**ISFJ**	**INFJ**	**INTJ**
N = 21	N = 7	N = 4	N = 7
% = 8.20	% = 2.73	% = 1.56	% = 2.73
I = 2.19*	I = 0.59	I = 0.39	I = 1.10
ISTP	**ISFP**	**INFP**	**INTP**
N = 33	N = 7	N = 11	N = 19
% = 12.89	% = 2.73	% = 4.30	% = 7.42
I = 3.76***	I = 0.59	I = 0.66	I = 1.70
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 31	N = 15	N = 32	N = 28
% = 12.11	% = 5.86	% = 12.50	% = 10.94
I = 1.94*	I = 0.55*	I = 0.84	I = 2.51**
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 21	N = 6	N = 6	N = 8
% = 8.20	% = 2.34	% = 2.34	% = 3.12
I = 0.88	I = 0.21***	I = 0.44	I = 0.72

	N	%	I
E	147	57.42	0.87*
I	109	42.58	1.25*
S	141	55.08	1.03
N	115	44.92	0.97
T	168	65.62	1.71***
F	88	34.38	0.56***
J	80	31.25	0.70***
P	176	68.75	1.25***
IJ	39	15.23	1.02
IP	70	27.34	1.44*
EP	106	41.41	1.15
EJ	41	16.02	0.54***
ST	106	41.41	1.82***
SF	35	13.67	0.44***
NF	53	20.70	0.67**
NT	62	24.22	1.55**
SJ	55	21.48	0.75*
SP	86	33.59	1.35*
NP	90	35.16	1.16
NJ	25	9.77	0.60*
TJ	57	22.27	1.12
TP	111	43.36	2.36***
FP	65	25.39	0.69**
FJ	23	8.98	0.36***
IN	41	16.02	0.92
EN	74	28.91	1.00
IS	68	26.56	1.61**
ES	73	28.52	0.77*
Sdom	74	28.91	1.15
Ndom	71	27.73	1.07
Tdom	81	31.64	1.47**
Fdom	30	11.72	0.43***

Note: ■ = 1% of sample.

Print date: 6/1/93

* < .05, ** < .01, *** < .001

Base total N = 321. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

5.27	1.46	0.09	0.03
18.11	1.46	1.37	2.47
6.11	4.10	0.72	9.13
0.23	15.81	3.24	0.59

E	4.50	IJ	0.01	SJ	3.86	IN	0.21
I	4.50	IP	5.65	SP	5.23	EN	0.00
S	0.13	EP	1.67	NP	1.59	IS	8.68
N	0.13	EJ	15.18	NJ	5.10	ES	4.70
T	42.48	ST	23.19	TJ	0.47	Sd	0.98
F	42.48	SF	23.55	TP	42.76	Nd	0.26
J	11.11	NF	7.54	FP	8.50	Td	7.62
P	11.11	NT	6.80	FJ	24.67	Fd	21.57

The most frequent type for males was **ISTP** (12.89%, I = 3.76, <.001), followed closely by ESTP (12.11%). The modal type was **ESTP - E** (57%), **S** (55%), **T** (66%), **P** (69%). Compared to CAPT females, the CAPT males were less E (57% vs. 66%, I = .87, <.05), more T (66% vs. 38%, I = 1.7, <.001), and more P (69% vs. 55%, I = 1.25, <.001). Furthermore, there were almost twice as many ST males as females (41% vs. 23%, I = 1.86, <.001), and almost two and one-half times as many TP males than females (43% vs. 18%, I = 2.36, <.001). At the .01 level, males were more IP (I = 1.44), NT (I = 1.55), SP (I = 1.35), and IS (I = 1.61) compared to CAPT females. The males also exhibited a greater frequency of T dominance (32% vs. 22%, I = 1.47, <.01).

CAPT-MBTI Data Bank data for junior high school females indicated the most frequent type to be **ENFP** (14.95%). The modal type was **ESFP - E** (66%), **S** (54%), **F** (62%), **P** (55%). Females, in comparison to males, also had a greater frequency of F dominance (27% vs. 12%, I = 2.34, <.001). Based on the above, the present researcher felt there was enough evidence of junior high gender differences to warrant separate analyses for males and females in the present study.

Non-Native males vs. non-Native females.

Comparison of the non-Native males to the non-Native females is shown in Table 3. These results are consistent with CAPT data findings. Here the most frequent male type was also **ISTP** (18.18%, I = 2.73, <.05), with ESTP again being a close second (17.17%). The modal type for males in this sample was **ESTP** - **E** (53%) **S** (73%) **T** (84%) **P** (59%).

As in the comparison of CAPT males to CAPT females, the non-Native male sample had more S's (73% vs. 63%) and significantly more T's (84% vs. 40%, I = 2.19, <.001) than the females. There were also significantly more ST males (63% vs. 24%, I = 2.61, <.001), TJ males (36% vs. 11%, I = 3.41, <.001) and TP males (47% vs. 29%, I = 1.62, <.05) than females. The non-Native males, like the CAPT males, also exhibited significant T dominance (41% vs. 19%, I = 2.22, <.01) and conversely, a low preference for F dominance (5% vs. 32%, I = .16, <.001).

The data for non-Native males compared to non-Native females did not have as many significant differences overall as the corresponding CAPT male to female comparison. However, the local non-Native male sample had significantly more S's (73% vs. 55%, <.01), more T's (84% vs. 66%, <.001), and more ST's (63% vs. 41%, <.001) than the CAPT male sample. Differences between the non-Native and CAPT samples

could be due, in part, to the relatively small local sample size, which resulted in the use of Fisher's exact probability tests in 94% (15 of 16) of the calculations in the local sample compared to only 6.25% use of Fisher's exact probability in the CAPT comparison. The differences could also be due to local variations in control and discipline. Due to the similarities in most frequent type, modal type, ST and TP, it was felt that the local sample was sufficiently representative of the CAPT sample to be used as a comparison group.

Table 3. **Comparison of Non-Native Males vs. Non-Native Females**

Junior High Study

Non-Native Males (N=99)

compared with

Non-Native Females (N=75)

ISTJ	ISFJ	INFJ	INTJ
N = 12	N = 2	N = 1	N = 6
% = 12.12	% = 2.02	% = 1.01	% = 6.06
I = 3.03	I = 0.19*	I = 0.00	I = 0.00
¢¢¢¢¢¢¢¢¢¢	¢¢	¢	¢¢¢¢¢¢
¢¢			
ISTP	**ISFP**	**INFP**	**INTP**
N = 18	N = 2	N = 1	N = 5
% = 18.18	% = 2.02	% = 1.01	% = 5.05
I = 2.73*	I = 0.15**	I = 0.11*	I = 0.95
¢¢¢¢¢¢¢¢¢¢	¢¢	¢	¢¢¢¢¢
¢¢¢¢¢¢¢¢			
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 17	N = 4	N = 4	N = 7
% = 17.17	% = 4.04	% = 4.04	% = 7.07
I = 2.58	I = 0.43	I = 0.51	I = 0.66
¢¢¢¢¢¢¢¢¢¢	¢¢¢¢	¢¢¢¢	¢¢¢¢¢¢¢
¢¢¢¢¢¢¢			
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 15	N = 2	N = 0	N = 3
% = 15.15	% = 2.02	% = 0.00	% = 3.03
I = 2.27	I = 0.38	I = 0.00	I = 0.00
¢¢¢¢¢¢¢¢¢¢	¢¢		¢¢¢
¢¢¢¢¢			

	N	%	I
E	52	52.53	1.04
I	47	47.47	0.96
S	72	72.73	1.16
N	27	27.27	0.73
T	83	83.84	2.10***
F	16	16.16	0.27***
J	41	41.41	1.35
P	58	58.59	0.84
IJ	21	21.21	1.45
IP	26	26.26	0.76
EP	32	32.32	0.93
EJ	20	20.20	1.26
ST	62	62.63	2.61***
SF	10	10.10	0.26***
NF	6	6.06	0.28**
NT	21	21.21	1.33
SJ	31	31.31	1.17
SP	41	41.41	1.15
NP	17	17.17	0.52*
NJ	10	10.10	2.53
TJ	36	36.36	3.41***
TP	47	47.47	1.62*
FP	11	11.11	0.28***
FJ	5	5.05	0.25**
IN	13	13.13	0.90
EN	14	14.14	0.62
IS	34	34.34	0.99
ES	38	38.38	1.37
Sdom	35	35.35	1.15
Ndom	18	18.18	0.97
Tdom	41	41.41	2.22**
Fdom	5	5.05	0.16***

Note: ¢ = 1 person. Print date: 10/29/92 *<.05, **<.01, ***<.001

Base total N = 75. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

0.10	0.02	1.00	0.04
0.04	0.01	0.01	1.00
0.06	0.21	0.33	0.70
0.10	0.40	0.08	0.26

E	0.06	IJ	1.22	SJ	0.44	IN	0.08
I	0.06	IP	1.44	SP	0.53	EN	2.12
S	2.00	EP	0.11	NP	6.09	IS	0.00
N	2.00	EJ	0.50	NJ	0.15	ES	2.05
T	36.02	ST	25.63	TJ	14.91	Sd	0.42
F	36.02	SF	20.02	TP	5.87	Nd	0.01
J	2.12	NF	9.01	FP	19.77	Td	10.21
P	2.12	NT	0.75	FJ	0.00	Fd	0.00

Cree males vs. Cree females.

Table 4 compares Cree males with Cree females. Here the most frequent type for males was **ISTP** (25.81%, I = 2.90, <.05), being almost three times more frequent than in Cree females. The modal type for the Cree male group was **ISTP** - **I** (65%) **S** (77%) **T** (73%) **P** (69%) with a strong T dominance (47% vs. 18%, I = 2.63, <.01).

There were 2.3 times as many Cree males showing a T preference as Cree females (72.58% vs. 31.11%, I = 2.33, <.001). Males were also more ST (58% vs. 27%, I = 2.18, <.01 level) and more TP (47% vs. 18%, I = 2.63, <.01 level) compared to females. Here again, Cree males exhibited a strong T dominance (47%) while Cree females exhibited F dominance (44%).

There are roughly the same percentages of S's in the Cree and non-Native male samples (77% vs 73%) and the same percentages of P's in the Cree male and the CAPT male samples. However, the Cree male sample has fewer T's (by 11%) than the local sample, but has more T's than the CAPT sample (by 7%). Both the Cree and the non-Native male samples had greater percentages of S's than the CAPT sample (77% and 73% compared with 55% in the CAPT group). These differences could be due to the smaller sample sizes of the local groups or to possible cultural differences.

Table 4. **Comparison of Cree Males vs. Cree Females**

Junior High Study

Cree Males (N=62)

compared with

Cree Females (N=45)

ISTJ	ISFJ	INFJ	INTJ
N = 8 % = 12.90 I = 5.81 ¢¢¢¢¢¢¢¢	N = 0 % = 0.00 I = 0.00	N = 0 % = 0.00 I = 0.00	N = 0 % = 0.00 I = 0.00
ISTP	**ISFP**	**INFP**	**INTP**
N = 16 % = 25.81 I = 2.90* ¢¢¢¢¢¢¢¢¢¢ ¢¢¢¢¢¢	N = 7 % = 11.29 I = 0.42* ¢¢¢¢¢¢¢	N = 4 % = 6.45 I = 1.45 ¢¢¢¢	N = 5 % = 8.06 I = 0.00 ¢¢¢¢¢
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 6 % = 9.68 I = 1.45 ¢¢¢¢¢¢	N = 2 % = 3.23 I = 0.18* ¢¢	N = 1 % = 1.61 I = 0.36 ¢	N = 2 % = 3.23 I = 1.45 ¢¢
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 6 % = 9.68 I = 1.09 ¢¢¢¢¢¢	N = 3 % = 4.84 I = 0.73 ¢¢¢	N = 0 % = 0.00 I = 0.00	N = 2 % = 3.23 I = 0.00 ¢¢

	N	%	I
E	22	35.48	0.67
I	40	64.52	1.38
S	48	77.42	0.97
N	14	22.58	1.13
T	45	72.58	2.33***
F	17	27.42	0.40***
J	19	30.65	1.06
P	43	69.35	0.98
IJ	8	12.90	1.94
IP	32	51.61	1.29
EP	11	17.74	0.57
EJ	11	17.74	0.80
ST	36	58.06	2.18**
SF	12	19.35	0.36***
NF	5	8.06	0.52
NT	9	14.52	3.27
SJ	17	27.42	1.37
SP	31	50.00	0.83
NP	12	19.35	1.74
NJ	2	3.23	0.36
TJ	16	25.81	1.94
TP	29	46.77	2.63**
FP	14	22.58	0.42**
FJ	3	4.84	0.31
IN	9	14.52	2.18
EN	5	8.06	0.60
IS	31	50.00	1.25
ES	17	27.42	0.69
Sdom	16	25.81	0.89
Ndom	3	4.84	0.54
Tdom	29	46.77	2.63**
Fdom	14	22.58	0.51*

Note: ¢ = 1 person.

Print date: 10/29/92

* < .05, ** < .01, *** < .001

Base total N = 45. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

0.08	0.42	8888.89	0.42
0.04	4.22	0.70	0.07
0.73	0.02	0.57	1.00
1.00	1.00	0.07	0.51

E	3.39	IJ	0.35	SJ	0.78	IN	0.23
I	3.39	IP	1.41	SP	1.05	EN	0.52
S	0.10	EP	2.60	NP	0.29	IS	1.05
N	0.10	EJ	0.33	NJ	0.40	ES	1.87
T	18.13	ST	10.39	TJ	2.48	Sd	0.13
F	18.13	SF	13.48	TP	9.69	Nd	0.45
J	0.04	NF	0.35	FP	10.77	Td	9.69
P	0.04	NT	0.11	FJ	0.09	Fd	5.75

In the Cree male sample there were significantly more ST's (58%, N=36), which follows the pattern from CAPT males and non-Native junior high males compared with females. Again the males exhibit T dominance, with stronger T dominance shown in Cree males (47%) than in the non-Native male sample (41%) or CAPT (32%), while the females exhibit F dominance.

In comparing the Cree males with local non-Native males (see Table 5), the most frequent type for the Cree males was **ISTP** (25.81%, N=16) and the modal type was **I** (65%, N=40) **S** (77%, N=48) **T** (73%, N=45) **P** (69%, N=43). This analysis showed fewer significant differences (with no differences at the .001 level) than found when comparing the Cree males to Cree females. This supports the need for separate analysis for males and females based on gender differences.

In summary, the above gender comparisons reflect similar patterns in all three samples. Gender differences do indeed exist, thus supporting the need for separate gender analyses of the Cree data. The following research questions will therefore include separate analysis tables for Cree males and females in comparison to non-Native and CAPT samples.

Table 5. **Comparison of Cree Males vs. Non-Native Males**

Junior High Study

Cree Males (N=62)

compared with

Non-Native Males (N=99)

ISTJ	ISFJ	INFJ	INTJ
N = 8	N = 0	N = 0	N = 0
% = 12.90	% = 0.00	% = 0.00	% = 0.00
I = 1.06	I = 0.00	I = 0.00	I = 0.00
¢¢¢¢¢¢¢¢			
ISTP	**ISFP**	**INFP**	**INTP**
N = 16	N = 7	N = 4	N = 5
% = 25.81	% = 11.29	% = 6.45	% = 8.06
I = 1.42	I = 5.59*	I = 6.39	I = 1.60
¢¢¢¢¢¢¢¢¢¢ ¢¢¢¢¢¢	¢¢¢¢¢¢¢	¢¢¢¢	¢¢¢¢¢
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 6	N = 2	N = 1	N = 2
% = 9.68	% = 3.23	% = 1.61	% = 3.23
I = 0.56	I = 0.80	I = 0.40	I = 0.46
¢¢¢¢¢¢	¢¢	¢	¢¢
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 6	N = 3	N = 0	N = 2
% = 9.68	% = 4.84	% = 0.00	% = 3.23
I = 0.64	I = 2.40	I = 0.00	I = 1.06
¢¢¢¢¢¢	¢¢¢		¢¢

	N	%	I
E	22	35.48	0.68*
I	40	64.52	1.36*
S	48	77.42	1.06
N	14	22.58	0.83
T	45	72.58	0.87
F	17	27.42	1.70
J	19	30.65	0.74
P	43	69.35	1.18
IJ	8	12.90	0.61
IP	32	51.61	1.97**
EP	11	17.74	0.55*
EJ	11	17.74	0.88
ST	36	58.06	0.93
SF	12	19.35	1.92
NF	5	8.06	1.33
NT	9	14.52	0.68
SJ	17	27.42	0.88
SP	31	50.00	1.21
NP	12	19.35	1.13
NJ	2	3.23	0.32
TJ	16	25.81	0.71
TP	29	46.77	0.99
FP	14	22.58	2.03*
FJ	3	4.84	0.96
IN	9	14.52	1.11
EN	5	8.06	0.57
IS	31	50.00	1.46*
ES	17	27.42	0.71
Sdom	16	25.81	0.73
Ndom	3	4.84	0.27*
Tdom	29	46.77	1.13
Fdom	14	22.58	4.47**

Note: ¢ = 1 person. Print date: 10/29/92 *<.05, **<.01, ***<.001

Base total N = 99. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

0.02	0.52	1.00	0.08
1.33	0.02	0.07	0.51
1.75	1.00	0.65	0.48
1.01	0.37	8888.89	1.00

E	4.46	IJ	1.78	SJ	0.28	IN	0.06
I	4.46	IP	10.63	SP	1.14	EN	0.32
S	0.44	EP	4.14	NP	0.12	IS	3.88
N	0.44	EJ	0.15	NJ	0.13	ES	2.04
T	2.97	ST	0.33	TJ	1.94	Sd	1.61
F	2.97	SF	2.77	TP	0.01	Nd	0.02
J	1.89	NF	0.75	FP	3.82	Td	0.45
P	1.89	NT	1.13	FJ	1.00	Fd	0.00

Research Question 2

Is there a Cree modal type and/or most frequent type?

The most frequent type for Cree males was **ISTP** (25.81%, I = 2.90, <.05), being almost three times more frequent than in Cree females. The modal type for the Cree male group identified in Table 6 was **ISTP** - **I** (65%) **S** (77%) **T** (73%) **P** (69%).

The most frequent type for Cree females was **ISFP** (26.67%, I = 2.00). The modal type for Cree females was **ESFP** - **E** (53%) **S** (80%) **F** (69%) **P** (71%). See Table 7.

Table 6. Comparison of Cree Males vs CAPT Males

Junior High Study

Cree Males (N=62)

compared with

CAPT Data Bank Males (N=256)

ISTJ	ISFJ	INFJ	INTJ
N = 8	N = 0	N = 0	N = 0
% = 12.90	% = 0.00	% = 0.00	% = 0.00
I = 1.57	I = 0.00	I = 0.00	I = 0.00
¢¢¢¢¢¢¢¢			
ISTP	**ISFP**	**INFP**	**INTP**
N = 16	N = 7	N = 4	N = 5
% = 25.81	% = 11.29	% = 6.45	% = 8.06
I = 2.00*	I = 4.13**	I = 1.50	I = 1.09
¢¢¢¢¢¢¢¢¢¢ ¢¢¢¢¢¢	¢¢¢¢¢¢¢	¢¢¢¢	¢¢¢¢¢
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 6	N = 2	N = 1	N = 2
% = 9.68	% = 3.23	% = 1.61	% = 3.23
I = 0.80	I = 0.55	I = 0.13*	I = 0.29
¢¢¢¢¢¢	¢¢	¢	¢¢
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 6	N = 3	N = 0	N = 2
% = 9.68	% = 4.84	% = 0.00	% = 3.23
I = 1.18	I = 2.06	I = 0.00	I = 1.03
¢¢¢¢¢¢	¢¢¢		¢¢

	N	%	I
E	22	35.48	0.62**
I	40	64.52	1.52**
S	48	77.42	1.41**
N	14	22.58	0.50**
T	45	72.58	1.11
F	17	27.42	0.80
J	19	30.65	0.98
P	43	69.35	1.01
IJ	8	12.90	0.85
IP	32	51.61	1.89***
EP	11	17.74	0.43***
EJ	11	17.74	1.11
ST	36	58.06	1.40*
SF	12	19.35	1.42
NF	5	8.06	0.39*
NT	9	14.52	0.60
SJ	17	27.42	1.28
SP	31	50.00	1.49*
NP	12	19.35	0.55*
NJ	2	3.23	0.33
TJ	16	25.81	1.16
TP	29	46.77	1.08
FP	14	22.58	0.89
FJ	3	4.84	0.54
IN	9	14.52	0.91
EN	5	8.06	0.28***
IS	31	50.00	1.88***
ES	17	27.42	0.96
Sdom	16	25.81	0.89
Ndom	3	4.84	0.17***
Tdom	29	46.77	1.48*
Fdom	14	22.58	1.93*

Note: ¢ = 1 person. Print date: 10/29/92 *< .05, **< .01, ***< .001

Base total N = 256. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

1.33	0.35	0.59	0.35
6.39	8.68	0.50	1.00
0.29	0.54	0.02	0.09
0.14	0.38	0.36	1.00

E	9.65	IJ	0.22	SJ	1.00	IN	0.08
I	9.65	IP	13.49	SP	5.78	EN	0.00
S	10.33	EP	12.02	NP	5.72	IS	12.79
N	10.33	EJ	0.11	NJ	0.13	ES	0.03
T	1.09	ST	5.60	TJ	0.35	Sd	0.24
F	1.09	SF	1.28	TP	0.24	Nd	0.00
J	0.01	NF	0.03	FP	0.21	Td	5.05
P	0.01	NT	2.71	FJ	0.32	Fd	4.94

Table 7. **Comparison of Cree Females vs Non-Native Females**

Junior High Study

Cree Females (N=45)

compared with

Non-Native Females (N=75)

ISTJ	ISFJ	INFJ	INTJ
N = 1	N = 1	N = 0	N = 1
% = 2.22	% = 2.22	% = 0.00	% = 2.22
I = 0.56	I = 0.21	I = 0.00	I = 0.00
¢	¢		¢
ISTP	**ISFP**	**INFP**	**INTP**
N = 4	N = 12	N = 2	N = 0
% = 8.89	% = 26.67	% = 4.44	% = 0.00
I = 1.33	I = 2.00	I = 0.48	I = 0.00
¢¢¢¢	¢¢¢¢¢¢¢¢¢¢ ¢¢	¢¢	
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 3	N = 8	N = 2	N = 1
% = 6.67	% = 17.78	% = 4.44	% = 2.22
I = 1.00	I = 1.90	I = 0.56	I = 0.21
¢¢¢	¢¢¢¢¢¢¢¢	¢¢	¢
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 4	N = 3	N = 3	N = 0
% = 8.89	% = 6.67	% = 6.67	% = 0.00
I = 1.33	I = 1.25	I = 1.67	I = 0.00
¢¢¢¢	¢¢¢	¢¢¢	

	N	%	I
E	24	53.33	1.05
I	21	46.67	0.95
S	36	80.00	1.28*
N	9	20.00	0.54*
T	14	31.11	0.78
F	31	68.89	1.15
J	13	28.89	0.94
P	32	71.11	1.03
IJ	3	6.67	0.45
IP	18	40.00	1.15
EP	14	31.11	0.90
EJ	10	22.22	1.39
ST	12	26.67	1.11
SF	24	53.33	1.38
NF	7	15.56	0.73
NT	2	4.44	0.28
SJ	9	20.00	0.75
SP	27	60.00	1.67*
NP	5	11.11	0.33**
NJ	4	8.89	2.22
TJ	6	13.33	1.25
TP	8	17.78	0.61
FP	24	53.33	1.33
FJ	7	15.56	0.78
IN	3	6.67	0.45
EN	6	13.33	0.59
IS	18	40.00	1.15
ES	18	40.00	1.43
Sdom	13	28.89	0.94
Ndom	4	8.89	0.48
Tdom	8	17.78	0.95
Fdom	20	44.44	1.39

Note: ¢ = 1 person.

Print date: 10/29/92

* < .05, ** < .01, *** < .001

Base total N = 75. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

0.67	0.15	8888.89	0.37
0.73	3.34	0.48	0.30
1.00	1.83	0.49	0.15
0.73	1.00	0.67	8888.89

E	0.08	IJ	0.25	SJ	0.68	IN	0.25
I	0.08	IP	0.34	SP	6.55	EN	1.58
S	3.96	EP	0.16	NP	0.01	IS	0.34
N	3.96	EJ	0.73	NJ	0.42	ES	1.85
T	0.96	ST	0.11	TJ	0.19	Sd	0.04
F	0.96	SF	2.45	TP	2.00	Nd	0.19
J	0.04	NF	0.61	FP	2.02	Td	0.01
P	0.04	NT	0.08	FJ	0.37	Fd	1.88

Research Question 3

What, if any, are the most frequent type, and modal type differences between the Cree sample and the non-Native samples?

The CAPT and local non-Native male samples had the same most frequent type (**ISTP**) and the same modal type (**ESTP**). However, the local non-Native males were significantly more **S** than the CAPT males.

The most frequent type for Cree males was **ISTP**. The modal type for the Cree male group was **ISTP**. The Cree males were significantly more **S** compared with the CAPT males and significantly more **I** than the either the CAPT or the local non-Native male samples.

The incidence of I's in Cree males as compared to non-Native males was 1.36 with 65% of the Cree male sample being I. There were almost twice as many Cree IP's (50% vs 26%), FP's (23% vs 11%), and IS's (52% vs 26%) than in the non-Native group. While the Cree males are strongly T dominant, the percentages are comparable between the Cree (Tdom = 47%) and non-Native sample (Tdom = 41%). The differences showed up in the remaining ranking of dominance: Cree males had 4.5 times the incidence of F dominance (25% vs 5%) and roughly .25 times the incidence of N dominance (5% vs 18%) than the non-Native males. See Table 5.

The most frequent type for CAPT females was **ENFP** while the most frequent type for the non-Native females and Cree females was **ISFP**. All three female samples had the same modal type (**ESFP**). The Cree females were significantly more **S** than their local non-Native counterparts (I = 1.28, <.05) and the CAPT females (I = 1.49, <.001). The Cree females were also significantly more **P** than the CAPT females (I = 1.29, <.05) and more strongly **F** dominant (44% vs. 32%) than the CAPT females (I = 1.62, <.05). See Table 8.

Table 8. **Comparison of Cree Females vs. CAPT Females**

Junior High Study

Cree Females (N=45)

compared with

CAPT Data Bank Females (N=321)

ISTJ	ISFJ	INFJ	INTJ
N = 1	N = 1	N = 0	N = 1
% = 2.22	% = 2.22	% = 0.00	% = 2.22
I = 0.59	I = 0.48	I = 0.00	I = 0.89
¢	¢		¢
ISTP	**ISFP**	**INFP**	**INTP**
N = 4	N = 12	N = 2	N = 0
% = 8.89	% = 26.67	% = 4.44	% = 0.00
I = 2.59	I = 5.71***	I = 0.68	I = 0.00
¢¢¢¢	¢¢¢¢¢¢¢¢¢¢ ¢¢	¢¢	
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 3	N = 8	N = 2	N = 1
% = 6.67	% = 17.78	% = 4.44	% = 2.22
I = 1.07	I = 1.68	I = 0.30	I = 0.51
¢¢¢	¢¢¢¢¢¢¢¢	¢¢	¢
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 4	N = 3	N = 3	N = 0
% = 8.89	% = 6.67	% = 6.67	% = 0.00
I = 0.95	I = 0.61	I = 1.26	I = 0.00
¢¢¢¢	¢¢¢	¢¢¢	

	N	%	I
E	24	53.33	0.81
I	21	46.67	1.37
S	36	80.00	1.49***
N	9	20.00	0.43***
T	14	31.11	0.81
F	31	68.89	1.12
J	13	28.89	0.64*
P	32	71.11	1.29*
IJ	3	6.67	0.45
IP	18	40.00	2.10**
EP	14	31.11	0.86
EJ	10	22.22	0.74
ST	12	26.67	1.17
SF	24	53.33	1.73**
NF	7	15.56	0.50*
NT	2	4.44	0.29
SJ	9	20.00	0.70
SP	27	60.00	2.41***
NP	5	11.11	0.37**
NJ	4	8.89	0.55
TJ	6	13.33	0.67
TP	8	17.78	0.97
FP	24	53.33	1.45*
FJ	7	15.56	0.62
IN	3	6.67	0.38
EN	6	13.33	0.46*
IS	18	40.00	2.42***
ES	18	40.00	1.08
Sdom	13	28.89	1.14
Ndom	4	8.89	0.34*
Tdom	8	17.78	0.83
Fdom	20	44.44	1.62*

Note: ¢ = 1 person.

Print date: 10/29/92

*< .05, **< .01, ***< .001

Base total N = 321. Groups are independent.

Calculated values of Chi Square *or* Fisher's exact probability (underlined).

Type Table Significance

0.72	0.70	0.24	1.00
0.10	27.94	0.75	0.23
1.00	2.01	0.06	0.71
1.00	0.45	0.72	0.23

E	2.78	IJ	0.17	SJ	1.48	IN	0.08
I	2.78	IP	10.28	SP	23.47	EN	4.89
S	11.23	EP	0.44	NP	0.01	IS	13.93
N	11.23	EJ	1.13	NJ	0.27	ES	0.14
T	0.88	ST	0.34	TJ	1.11	Sd	0.28
F	0.88	SF	8.95	TP	0.01	Nd	0.01
J	4.11	NF	4.48	FP	4.57	Td	0.33
P	4.11	NT	0.06	FJ	1.91	Fd	5.50

Research Question 4

What is the nature of the psychological type preference differences between the sample groups?

Discussion of the type differences between the sample groups is broken down into the following comparisons:

1. Cree males vs. non-Native males;
2. Cree males vs. CAPT males;
3. Cree females vs. non-Native females;
4. Cree females vs. CAPT females;

1. Cree males vs. non-Native males.

In comparing the Cree males with non-Native males (see Table 5), the most frequent type for the Cree males was **ISTP** (25.81%, I = 1.42) and the modal type was **ISTP** - **I** (65%) **S** (77%) **T** (73%) **P** (69%).

Here a significant difference was observed between Cree males and non-Native males in the incidence of I's and E's. Cree males were 65% I, whereas non-Native males were 47% I (I = 1.36, <.05). A further breakdown of the data revealed that there were almost twice as many Cree IP's (52% vs. 26%, I = 1.97, <.01) and FP's (23% vs. 11%, I = 2.03, <.05), and more IS's (50% vs. 34%, I = 1.46, <.01) than in the non-Native group. Cree males also showed a T dominance preference (47%), which was similar to that obtained for the non-Native sample (41%). Of possible additional interest

was the fact that Cree males had 4.5 times the incidence of F dominance (23% vs. 5%) in comparison to non-Native males.

2. Cree males vs. CAPT males.

Table 6 shows the comparison of Cree males compared to CAPT males. Cree males were found to be 65% I, which was approximately 1.5 times the 43% incidence of I's in the CAPT Data Bank male sample (I = 1.52, <.01). Cree males were also observed to be more S (77% vs. 55%, I = 1.41, <.01). Several other differences were noted. For example, there were almost twice as many IP's (52% vs. 27%, I = 1.89, <.001) and IS's (50% vs. 27%, I = 1.88, <.001) in the Cree male sample. There were also more Cree ST's (58% vs. 41%, I = 1.4, <.05) and SP's (50% vs. 34%, I = 1.49, <.05). The frequency of T dominance for Cree males was 47%, whereas it was 32% in the CAPT male sample (I = 1.48, <.05). Of further interest was the fact that N dominance was strongly under represented in the Cree sample (5% vs. 28%, I = .17, <.001).

3. Cree females vs. non-Native females.

Table 7 compares Cree females to non-Native females. The most frequent type here was **ISFP** (26.67%, I = 2.00) and the second most frequent type was ESFP (17.78%, I = 1.90). The modal type was **ESFP** - **E** (53%) **S** (80%) **F** (69%) **P** (71%). The only significant main effect noted was that Cree females

were more S (80% vs. 63%, I = 1.28, <.05) than the non-Native female sample. In terms of combined effects, Cree females were over-represented on SP (60% vs. 36%, I = 1.67, <.05) and under-represented on NP (11% vs. 33%, I = .33, <.01). Cree females also seemed to have a greater preference for F dominance (44% vs. 32%), although this was not a statistically significant effect.

4. Cree females vs. CAPT females.

Table 8 presents a comparison of Cree females to CAPT females. A greater number of significant differences were observed here than in the comparable CAPT male comparison. Significant S-N and J-P effects are obvious. In terms of S-N preferences, there were 1.5 times more S's in the Cree female sample (80% vs. 53%, I = 1.49, <.001) and fewer N's (20% vs. 46%, I = .43, <.001) than in the CAPT female sample. Cree females were also more P (71% vs. 55%, I = 1.29, <.05) and less J (29% vs. 44%, I = .64, <.05).

The most frequent type for Cree females was **ISFP** (26.67%, I = 5.71, <.001), which was almost six times as frequent as in the CAPT sample. Several other differences were noted. There were more IP's (40% vs. 19%, I = 2.10, <.01), SF's (53% vs. 31%, I = 1.73, <.01) and almost 2.5 times as many SP's (60% vs. 25%, I = 2.41, <.001) and IS's (40% vs. 17%, I = 2.42, <.001) in the Cree female sample

than in the CAPT female sample. Cree females showed a higher frequency of F dominance (44% vs. 27%, I = 1.62, <.05) and a lower level of N dominance (9% vs. 26%, I = .34, <.05) than the CAPT female sample. Thus, while the Cree female and the local non-Native female samples were very similar, more significant differences were observed when Cree females were compared with CAPT junior high females.

Research Question 5

Are there cultural differences in type preferences between the sample groups?

There are apparent cultural differences. Table 9 summarizes the data and highlights differences of plus or minus 15 percentage points. The table shows that Cree males have a stronger preference for **I** than either non-Native males or the CAPT males, and that the modal type for Cree males is **ISTP**, in contrast to ESTP for the other two groups. The Cree males exhibited the same most frequent type (ISTP) as the two comparative samples. Cree males also appear to be strongly S, especially in comparison to the CAPT male sample.

Cree females, on the other hand, appear to have an even stronger preference for **S** than Cree males, as reflected by both non-Native and CAPT sample differences. Cree females also tend to be more **P** than the CAPT sample. The modal type for all three female groups was **ESFP**. The most frequent type for Cree and local non-Native females was **ISFP**, while the most frequent type for CAPT females was ENFP.

In summary, the data suggest that Cree males are more introverted than other male junior high students in this study and that both Cree males and females tend to prefer sensate focus when observing their world. Gender

differences usually found in junior high students were also observed for the Cree, with males being more T and females more F.

However, there were two other significant findings. One was that **all junior high groups had a definite P "go-with-the-flow" preference, irrespective of gender.** As well, **the Native and the local non-Native groups were predominantly S.** The implications of these findings will be discussed in Chapter 5.

Table 9. **Summary of Results**

MBTI Form F Junior High Percentages

Males	CAPT N=256	Non-Native N=99	Cree N=62
E	57.42 (+21.94)*	52.53 (+17.05)*	35.48
I	42.58 (-21.94)	47.47 (-17.05)	64.52
S	55.08 (-22.34)*	72.73	77.42
N	44.92 (+22.34)	27.27	22.58
T	65.62	83.84	72.58
F	34.38	16.16	27.42
J	31.25	41.41	30.65
P	68.75	58.59	69.35
Modal Type	ESTP	ESTP	ISTP
Frequent Type	ISTP	ISTP	ISTP

Females	CAPT N=321	Non-Native N=75	Cree N=45
E	66.04	50.67	53.33
I	33.96	49.33	46.67
S	53.58 (-26.42)*	62.67 (-17.33)*	80.00
N	46.42 (-26.42)	37.33 (-17.33)	20.00
T	38.32	40.00	31.11
F	61.68	60.00	68.89
J	44.86 (+15.97)	30.67	28.89
P	55.14 (-15.97)	69.33	71.11
Modal Type	ESFP	ESFP	ESFP
Frequent Type	ENFP	ISFP	ISFP

* Difference from Cree sample of plus or minus 15 points.

V. DISCUSSION

Introduction

This study investigated whether Cree junior high school students exhibit unique psychological type characteristics or preferences when compared to local non-Native and CAPT Data Bank junior high students. The study also investigated whether there were sufficient significant differences between males and females to warrant separate analyses of the data based on gender. This chapter will present the major findings of the study beginning with a discussion of the modal type based on gender differences followed by a discussion of the cultural differences between the three samples. Thirdly, the SP temperament associated with Cree and local non-Native junior high school students will be discussed in terms of how these students present in the classroom. Fourthly, suggestions for utilizing type preferences as well as development of the complementary attitudes and functions will be outlined. The chapter will conclude with a discussion of relevant points to be considered in applying the MBTI cross culturally from a methodological perspective in relation to future research.

Gender Differences

The present research provides evidence of a distinctly Native modal type based on gender differences, with Cree

males being ISTP - I (65%) S (77%) T (73%) P (69%) and Cree females being ESFP - E (53%) S (80%) F (69%) P (71%). As well, significant gender differences were found between males and females in all three samples. Males were significantly over-represented on T and under-represented on F. Likewise, all female samples were significantly over-represented on F and under-represented on T. Males were also significantly more ST than females (2 - 2.5 times more ST than females). This was the case in all three samples. These findings lend further support to the importance of conducting separate male/female data analyses with the MBTI, especially with junior high school students.

Cultural Differences

The study also provides evidence of cultural type differences between Cree and non-Natives based on specific preference patterns. Cree males were found to be strongly I and S, compared to non-Native and CAPT males who were E and less strongly S. As well, Cree males had a different modal type (ISTP vs. ESTP) than either of the other male samples. Cree females, on the other hand, appeared to be strongly S in comparison to the non-Native and CAPT females, and also more strongly P, even though the modal type for all three groups was the same (ESFP).

The results of this study suggest that the MBTI has cross-cultural discriminant validity. The ISTP modal type of the Cree junior high school males was different from the ESTP modal type of the non-Native samples. More specifically, this suggests that introversion may be a specific cultural characteristic of Cree males. This finding is hardly surprising, as Native males frequently do not establish eye contact and their body language often suggests a wish to be left alone. Cree introversion could also reflect perceived self-reliance and personal strength, as well as a need for privacy. Further research is needed to examine these possibilities and their implications.

Of further interest is the fact that the most frequent type for Cree females when compared with both the local non-Native females and CAPT females was ISFP (26.7%, I = 2.00, and 26.7%, I = 5.7, respectively). These results appear to indicate that some Cree females exhibit a degree of introversion that, while not statistically significant, may have an impact on their learning style in the classroom and on how they are perceived by teachers and peers.

Cree males and females both showed a very strong S preference (77% and 80%, respectively), especially in comparison to the CAPT samples (55% and 54%), which also suggests a likely cultural difference. Native people have

traditionally been seen as present-oriented, relying on well-developed "felt" sensory skills for survival. Ross (1992) suggests that "a people whose knowledge is 'felt' knowledge, sensory knowledge, will look at the world very differently than those whose knowledge is primarily intellectual" (p. 81). Some Native peoples may also have developed a hunter archetype which heightens their sensory awareness. This could be reflected in highly-honed, present-oriented sensory skills which allow them to process sensory data unconsciously, because "it just feels right", rather than associatively.

The very low incidence of N preference for both Cree males and females (23% and 20%, respectively) is also interesting. The data suggests that Cree junior high school students, as a group, may have little insight into the implications of their actions, and concomitantly, have fewer long term goals. This will likely have implications on their educational process, which will be discussed later.

Two interesting Cree female effects were also observed. One was that Cree females were significantly more P than CAPT females (71% vs. 55%, I = 1.29, <.05), which could reflect a tendency for Cree females to be especially spontaneous and reactive to life experiences. Cree males were also quite P (69%). The second was that Cree females

were more frequently F dominant than the CAPT females (44% vs. 27%, I = 1.62, <.05). People with F dominance tend to make decisions based on personal values and consideration of the impact of their decisions on others. The F dominance preference of Cree females might be reflective of cultural traditions and values which foster consensus decision-making and concern for others (Ross, 1992). Traditionally, Native people have tended to be more group-focused than the Caucasian North American who seems to value individuality. In Native culture, high value is placed on personal choice and absolute non-interference in the lives of other people.

Cree males, on the other hand, showed greater T dominance (47%) than the local non-Native males (41%) and the CAPT male sample (32%). Individuals with T dominance tend to make decisions deductively on the basis of rational, linear logic and try to remain objective when making decisions or analyzing problems. The strong T dominance preference in Cree males could reflect a pragmatic day-to-day approach to life. Also of interest is the fact that the Cree male F dominance (23%) was 4.5 times greater than the non-Native male sample (5%) and 1.9 times greater than the CAPT male sample (12%). This finding could again reflect a culture that considers the "good of all" and values consensus decision-making ahead of individualism.

Another interesting observation was the under-representation of N dominance in the Cree sample (males 5%, females 9%) in comparison to the non-Native sample (males 18%, females 19%) and the CAPT sample (males 28%, females 26%). CAPT males and CAPT females had 5.7 and 2.9 times, respectively, more N dominance than their Cree counterparts. This may reflect the tendency of Cree junior high students to focus on the present rather than the future.

The fact that the Cree to CAPT comparisons often revealed more significant (or stronger) effects than non-Native comparisons could be due to cultural differences between Canadian and American junior high school students. It could also be due to the smaller size of the local sample. Further research comparing Canadian and American males and females is necessary to ascertain the significance of these findings.

Who is the ISTP Student?

The Cree males tended to be ISTP individuals, who are characterized by a "detached curiosity in leisure activity" (Provost, 1990, p. 47), preferring activities that are solitary or enjoyed with "a risk-taking" friend (Provost, 1990, p. 47). People with ISTP preferences like manipulating things (planes, skis, rifles, Nintendo controllers, pinball machines, etc.). These individuals

fall easily into play, as their tendency is to put play before work. Due to the tendency for the ISTP to be analytical and impersonal, they prefer to focus on the facts rather than on people or situations, unless out of necessity. Being introverted, they may appear outwardly quiet, reserved or detached, except with those they consider to be intimate friends. Being sensing, they are more present-oriented and factual, which will be evident in the logical manner in which they present concrete information. "In the ISTP combination, sensing will lend realism, matter-of-factness, sometimes an unexpected gift of fun for its own sake, often an interest in sports and outdoor recreation in general" (Myers, 1980, p. 91).

ISTP's are interested in how and why things work, and if able to use a hands-on approach to learning, will usually thrive in the situation. However, ISTP individuals have a tendency to procrastinate and put off making decisions or failing to follow through. Especially with young ISTP's, one of their outstanding traits is economy of effort. This trait is an asset if "they judge accurately how much effort is needed; then they do what the situation requires without fuss or lost motion" (Myers, 1987, p. 12). If the person underestimates or just does not bother to put in the effort,

"economy of effort can come perilously close to laziness, and little may get done" (Myers with Myers, 1980, p. 91).

Because of the ISTP's reliance on a logical approach in thinking, they may overlook what not only other people care about but also what they themselves care about, making it difficult for an ISTP to express appreciation.

ISTP Preference in the Classroom

ISTP students are linear learners and often need help in organizing their work and study habits, due to their SP temperament. This type of student likes direct, hands-on experience, accompanied by lectures and audiovisual presentations that appeal to all of the senses. He/she prefers the material presented in a logically structured, efficient and relevant fashion.

Being more introverted, the Cree male student is energized by ideas, but requires time to consider and concentrate on a few tasks/ideas before discussing or making a decision about his thoughts. Being more introverted, the Cree male may not communicate his thoughts or feelings to others, tending to sit back, observe, reflect and remain inconspicuous. This type of student will likely be uncomfortable with spontaneous questioning, preferring to have time in which to consider his response. They also prefer to work alone or with one or two other students.

Based on their strong sensing preference, Cree males would prefer precise step-by-step instructions that allow them to use skills they have already learned. To facilitate their learning, sensing students rely on hands-on experience rather than on theory. Such students enjoy custom and tradition and often draw on proven methods to solve current problems. ISTP students focus on the present, are interested in whatever appeals to the senses, and have well-developed skills of detail recall.

Cree males exhibit strong T dominance compared to females, and prefer to have material presented briefly and concisely. People with this preference find ideas or things more interesting than people and enjoy opportunities to demonstrate competence. However, that competence may be in relation to peers rather than academic competence in junior high students.

Cree males were not significantly more perceiving than the local non-Native or the CAPT males. However, the percentage of P's in this junior high sample was close to 70%, suggesting a major impact in the classroom and a major consideration for the teacher. Perceiving students tend to be curious and spontaneous, to the point of beginning to work on a task before the directions are complete. These students prefer the freedom to move around and find the

structure and routine of the classroom boring, which opens the potential for behaviour problems in class if these students are not kept sufficiently motivated. Perceiving students prefer tasks presented as games or dramatizations and can cope well with unplanned and unexpected changes in the procedure. Perceiving students may take on too many projects and have difficulty finishing them all. They tend to play first and work later. Their inefficient time management often results in allowing themselves insufficient time to complete their assignments, in requests for time extensions to complete the assigned work, or frustration and an unwillingness to take on responsibility for assignments.

Who is the ESFP Student?

The modal type for Cree females was ESFP. These individuals are outgoing, warm, friendly, easygoing and very social. They prefer group activities, such as team sports, and are quick to join a group that looks like fun (Provost, 1990).

These students rely on what they can see, hear, touch and know firsthand. They rely on the facts, and are sure that a satisfying solution to the problem can be achieved once they know all the facts (Myers, 1987). ESFP's make decisions based on personal values and relevance and tend to be open-minded and tolerant of others, including themselves.

ESFP's take things as they are and appear adept at easing tense situations and pulling those in conflict together. These individuals tend to be skilled problem solvers, as they "use" the existing rules, circumstances or systems in new ways, "rather than allowing them to be roadblocks" (Myers, 1987, p. 19).

ESFP's also enjoy pleasing others, even in small matters, and try to help other people feel secure and safe, while attempting to avoid confrontation and conflict. These individuals have difficulty accepting criticism, and can be devastated by sarcasm or ridicule, as they view things from a personal perspective (Meisgeier, Murphy & Meisgeier, 1989).

According to Myers (1987), ESFP's "are strong in the art of living. They get a lot of fun out of life..." (p. 19). To be effective, an ESFP needs to develop judgement and feeling in order to "use their values to provide standards for their behavior, and direction and purpose in their lives" (p. 19). If an ESFP fails to develop sufficient judgement to give them any stick-to-itiveness, the person has the potential to adapt mainly to their love of a good time, causing problems with their educational advancement.

ESFP Preference in the Classroom

Like their male counterparts, the Cree females are linear learners who need assistance in organizing their time and their study habits. They, too, prefer direct experience, using hands-on activities as well as audiovisual and lecture presentation of the material. ESFP's like to know why they are doing something before doing it. Things that are more personally relevant are more likely to be completed. Due to their extraverted nature, ESFP's prefer group activities and projects, team competition and class reports rather than solitary activities. ESFP's are very socially oriented and tend to be very vocal in the classroom, partly as a result of this social nature and partly because they need to be able to voice their ideas aloud in order to hear them and get feedback.

Like their males counterparts, Cree females are significantly sensing oriented, leading them to be present focused, concrete, and appreciative of facts and details. "Seeing is believing for this student" (Myers, 1987, p. 12). These students function best when given concrete, real-life examples from which to work.

Because of their strong feeling dominance, Cree females make decisions based on harmony and personal values. They will learn more from first hand experience than from books,

raising the possibility of academic under achievement due to their preferred way of learning. ESFP students are not likely to trust abstract ideas or theories until they have seen them tested in their experience. According to Myers (1987), ESFP's "may have to work harder than other types to achieve in school, but can do so when they see the relevance" (p. 19).

Cree females were very strongly perceiving, indicating a spontaneous and adaptable "go-with-the-flow" approach to life. They tend to be open-ended and often ask "What deadline?" They prefer to wait and see and possibly gather more information, prior to making a decision. This style flows well with the Native style of consensus decision-making but is not conducive to meeting teacher's deadlines.

While the results indicate cultural differences between the Cree students and the non-Native students, especially for the males, the most significant findings relate to the junior high school students in general, based on the high incidence of S and P in these groups. Prior to discussing the implications for education, it is necessary to examine the SP temperament, as this was the predominant temperament preference in both the Cree and the local non-Native samples.

The SP Temperament

While elementary schools often value mastery and discipline for success (an SJ preference), junior high school students have to deal with increasingly complex conceptual material. Since S junior high students prefer to deal with present factual data, the demand to conceptualize and abstract information, an N activity, may contribute to such students becoming increasingly frustrated with school. Expanding upon this, one needs to consider the SP (Dionysian) temperament, which occurred in 50% of Cree males, 60% of Cree females, 41% of non-Native males and 36% of non-Native females.

Kiersey and Bates (1978) characterize people with this temperament as being impulsive, present-oriented and needing action. For an SP, "to do as he wishes *when* he wishes, that's the ideal. To wait, to save, to store, to prepare, to live for tomorrow - that is not the way" (p. 31). According to Kiersey and Bates, SP's do acquire goals, but they are fewer and more tentatively held. If the goals become too numerous or restrictive, the SP will likely become restless and may have the urge to "take off". SP's also prefer to *do*, rather than practice. At times the doing can go on for hours. The authors state that SP's pride themselves on their freedom and wish to be seen as being

free. Based on these descriptions, SP individuals are likely to become bored with the status quo, preferring variety, spontaneity and fun. Due to their spontaneity and impulsivity, SP's must live in the present moment. "For the SP, to wait is psychological death; delay effectively kills his impulse" (Kiersey & Bates, 1978). Thus, SP's are not goal oriented and have less insight into the implications or consequences of their actions. Having minimal desire for completion or closure, the process-oriented SP's "work" is basically play. The authors also state that SP's tend to abandon formal education more often than any other temperament. Thus, the high incidence of SP temperaments in Cree junior high students may be associated with their high dropout rate. Research is needed to explore this possibility.

Implications for the Education of All Students

Based on the high dropout rate for both Native and non-Native junior high students, the need is apparent that modifications must be made to the present curricula and instructional methods in an effort to assist these students to remain in school. Saracho (1983), stated that "there is still no firm foundation upon which researchers can prescribe better instructional methods and curricula to improve the quality of education for all children" (p. 188).

However, the present study of Native typology corroborates the findings of Lawrence (1992) and Moody (1992) in support of the use of psychological type as a foundation upon which teachers can utilize effective instructional approaches to improve the quality of education for all "types" of children, making school a more satisfying environment for both students and teachers. Holland (cited in Gade, Fuqua & Hurlburt, 1983) stated "the greater the congruence between the student's personality pattern and the educational environment the more satisfying the interactions will be" (p. 183). The author hypothesizes that if students' type preferences are met and satisfied in the learning environment of the school and find the learning personally relevant, students will be more likely to remain in school.

MBTI studies have demonstrated that there are specific "types" that tend to drop out of school most frequently. Myers and McCaulley (1985) conclude that students who prefer introversion and intuition "will show greater academic aptitude than persons who prefer extraversion and sensing" (p. 196). The preferences most linked to dropout were E, S, F and P. Lathey (1991) found that students who were SP types were at risk for poor academic achievement by grade 8. "Isabel Myers obtained type data from 500 people who did not finish 8th grade; 99% of them were sensing types" (Lawrence,

1992, chap. 3, p. 3). Thus, Cree females (ESFP) appear to be at an even higher risk for dropout than Cree males (ISTP).

Lawrence (1992) and Kiersey and Bates (1984) indicate that of the general population approximately 66% are sensing types (S) and approximately 45% are perceiving types (P). The results of this study of Native and non-Native junior high students indicate that in terms of sensing and perceiving preferences:

Cree males were 77% S and 70% P;

Cree females were 80% S and 71% P;

non-Native males were 73% S and 59% P;

non-Native females were 63% S and 69% P;

CAPT males were 55% S and 69% P; and

CAPT females were 54% S and 55% P.

It must be kept in mind that the CAPT sample was from high achieving junior high students who would be expected to be less S and less P. The question becomes one of how to ensure not only that Native junior high students, but also non-Native junior high students, remain in school and have satisfactory learning experiences.

Currently, academic advancement is based on achievement, which has been shown to be geared to the I, N, T and J preferences. Thus, teaching methods and curricula

are aimed primarily at only part of the student population. The focus in education would be more appropriate if switched to an emphasis on student development rather than solely on achievement, allowing all students equal opportunity for educational advancement. Lawrence (1992) has been a prime advocate for such a change and has set up experimental classrooms in Florida schools in order to implement his program which focuses on development and teaching to type. His approach is similar to that analyzed by Moody (1992) in Hawaii in instructing teachers in teaching to type, in order to facilitate learning and motivation.

Teaching to type, as defined here, involves planning teaching to all of the individual preferences: extraversion and introversion; sensing and intuition; thinking and feeling; and judging and perceiving - "without regard to which students are which types" (Lawrence, 1992 chap. 3, p. 11). Teaching to type facilitates learning for all students by engaging the students in their personal preferences and areas of strength while also giving them opportunities to develop the complementary/lesser used attitudes and functions. Teaching to type contributes to a more balanced development of the individual rather than limiting the focus to the realm of academic achievement.

Cultural differences between Cree and non-Natives are apparent. However, the importance of teaching to type is crucial in both cultures in order to motivate the SP students to remain in school. Motivation becomes a key issue. The keys to motivation for each student lie in understanding and utilizing his/her individual preferences. The E/I preference shows the individual's broad natural interests, which for the intuitive are more reflective and for the extravert show a more active, trial-and-error approach. Accommodating both preferences in the classroom via approaches allowing quiet time to ponder and reflect, balanced with active, vocal hands-on group activities would not only strengthen individual preferences but also provide opportunities for each to utilize the lesser developed attitudes.

The S/N preference reveals basic learning style differences (Lawrence, 1992). Most textbooks are geared to the intuitive who can abstract, see possibilities and tend to learn by leaps from a presented theory prior to active involvement. However, this approach does not meet the learning style needs of the more concrete experiential sensing individual, who learns in a step-by-step fashion and focuses on the literal meaning. The intuitive student learns best by first using abstractions like definitions,

theories and lists of procedures and rules to get an idea of the "big picture" before engaging in a concrete experience. This is the normal sequence of presentation of new material in our present school system. However, this puts the 66-75% of the students who are S at a disadvantage. For these students, the abstractions will make sense after they have the opportunity to use their senses in an active fashion to manipulate the information or material and thus gain understanding. Sensing students learn best through action and doing rather than words. Thus, effort is needed to provide more opportunities for active engagement with learning in the classroom. Not only would this lead to decreased frustration and increased enjoyment in school on the part of the sensing students, it would also allow the intuitive students the opportunity to develop their lesser used function and gain an appreciation for details and the concrete here-and-now experience. When the theoretical material is presented after the hands-on activities, the sensing students have a greater understanding and thus a better basis on which to link ideas to known facts. For the intuitive students, who automatically link idea to idea, the opportunity of having theoretical material provided after the fact gives them a chance to develop their lesser used function and helps them focus on facts, rather than simply

the big picture. The intuitive student can then utilize the facts to modify or verify the big picture. Using an advance "big picture" organizer at the start shows the intuitive student the conceptual context they will be working in. For the S student, the advance organizer serves as a bridge from the concepts and viewpoints they already hold to the new material, that is, a link from the old to the new.

Because of their desire to test new ideas against known facts, which takes more time, sensing students are unfairly evaluated by timed tests and tests of definitions, theories and abstractions to which they have no concrete experiential link. Thus, consideration must be given to assigning marks for other learning measures such as projects, experiments, and other hands-on activities, as well as tests.

Due to the strong S preference of the Cree students and the local non-Native students compared to the CAPT students, who were high academic achievers and thus likely more N, strong consideration should be given to utilization of sensing preferences in the classroom, in order to increase student interest and motivation.

The T/F preference shows "patterns of commitments and values" (Lawrence, 1992, chap. 2, p. 5) and are gender-related, with males showing greater T dominance and females showing F dominance. Thinking types "commit to activities

that respond to logical analysis where human factors don't have to be a primary concern" (p. 5). Feeling types commit to personal relationships and situations that draw on their ability to create harmony.

In order to accommodate both preferences, teachers must be cognizant of the needs that are associated with the thinking and feeling preferences. Thinking types need order and logic and also have a need to achieve and to have a sense of mastery. According to Lawrence (1992), this need for mastery is a natural ally to the school's objectives. However, many students do not know what skills they can develop to the mastery level and may need specific help in this area. "Without help, some of them will find mastery in anti-social behavior, because the need for mastery is much stronger than the need to please people - including teachers" (chap. 3, p. 13). Perhaps this is a factor contributing to the disruptive and acting-out behavior often exhibited by boys in the classroom.

"For a majority of the T's, mastery is most likely to be found in mechanical and technical areas, many of which are unfortunately unavailable for students to explore until they reach high school" (Lawrence, 1992, chap. 3, p. 13). Possibly, consideration should be given to expanding technical programs downwards into the junior high level, to

foster student interest and encourage them to remain in school because they are interested in what they are learning. Most people will continue to work if the material they are learning or working with is of personal relevance and interest.

Thinking types like to have the last word in arguments. However, they may choose the wrong things to persist in and may need help in identifying the values that are most worthy of their persistence and determination. To avoid useless confrontation with thinking type students, teachers can utilize their preference for thinking by channeling it into a careful analysis of the situation, looking for cause and effect relationships.

Feeling students, on the other hand, need approval and personal support more than they need to achieve, persist or "be right". Thus, in the classroom where independence, individualized activity and logical analysis are valued and dominant, feeling students may be cut off from one of their prime motivating sources - "the sense that their work is valued and appreciated" (Lawrence, 1992, chap. 3, p. 13). The feeling person's need to be needed, to be helpful to others, is very strong and can be satisfied in the classroom through group work or projects that have a goal of being helpful to people outside the classroom.

To accommodate the feeling types' need for friendship and harmony in relationships, teachers would be wise to allow students to work with a friend. Students will likely stay on task if they know that they will be separated if they abuse the privilege. The wise teacher will use the powerful force of peer affiliation, especially in junior and high students, rather than fight against it.

Utilizing approaches in the classroom that encompass both thinking and feeling functions will allow the students to again strengthen their preference as well as develop their complementary function, contributing to balanced development.

The judging/perceiving preference shows the individual's work habits. Judging types prefer having a clear plan or structure to follow, are drawn to closure and as a result, may choose a course of action before getting sufficient relevant information. Perceiving types, on the other hand, resist closure and may put off completing tasks or making decisions until the last minute, as they want to remain open to new information. As a result, perceiving types may need help with study skills and work habits in order to complete assignments on time.

Due to the high percentage of P type junior high students (59-71%), especially among the Cree males and

females and the non-Native females, teachers must provide opportunities in the classroom for these students to be spontaneous and freewheeling and to follow their curiosity. Based on these percentages, a large number of students are going to feel imprisoned by the typically structured classroom, "with the result that they spend energy needed for study trying to get freedom" (Lawrence, 1992, chap. 3, p. 15). Accommodating to the P's need for variety, novelty and change would diminish their need to struggle for freedom and allow them to focus on learning in their own style instead of resisting the more structured approach. P types "will accept structure and a system of accountability if they have choices within the structure, and especially if they have had a hand in deciding and protecting the structure" (p. 15). Perceiving students will work and focus on tasks that they have chosen and have a personal investment in and would benefit from a system of individually negotiated contracts for activities.

While perceiving types can accept structure if they have choices, judging types can accept variety and spontaneity if they know that the structure calls for variety and spontaneity or that there is an intact underlying structure (Lawrence, 1992). Judging types need predictability, an orderly sequence of studies and a system

of accountability, with expectations clearly laid out in advance. Because of their persistence, J's value milestones, completion and a sense of closure. Hence they value ceremonies and traditions that honour persistence. These activities could easily be included in the classroom.

Once again, allowing a more equitable split between structure and flexibility in the classroom will honour all of the students, leading to enhancement of their preference and development of their complementary function.

The idea of accommodating all type preferences and the learning styles that evolve from those preferences, necessitates major curriculum changes. As things stand now, the curriculum does not focus on all four dimensions of type which places some students at a disadvantage, while favoring other students, in particular the I, N, T and J types. At this point in time, a major shift in curriculum and textbook structure is needed to more equitably balance the educational approach to fit the needs of *all* students.

Due to the strong S and P preferences exhibited by both Cree and non-Native males and females, there is a need to develop the complementary/lesser used functions in these students. Instructing teachers in type theory and the implications of type for teaching and learning may facilitate such development.

Some of the problems faced by Cree junior high students may also be due their strong P tendency to "go-with-the-flow". Additional efforts need to made to encourage the Cree SP students to stay in school. A better understanding of Native culture, history, traditions, values and beliefs would also help teachers more fully appreciate Native typology and temperament, which in turn could lead to the development of more appropriate curricula for these students. For example, adopting a more consensus-oriented approach in the classroom, rather than an authoritative and autocratic approach, might encourage greater compliance from Native students. This could be complemented by a curriculum which values E, S and P preferences, but yet encourages long-term goal setting and discipline.

Cross-Cultural Research Methodology

The above discussion, complemented by the summary from Table 9 (chapter 4), illustrates the complexity inherent in looking at cross-cultural research and points out the necessity of a consistent methodological approach when conducting cross-cultural research. There are four points this writer considers to be important, based on the results of this study.

One, there is the need for separate gender analyses based on the differences found in this research and past

research supporting gender differences. Separate gender analysis is also warranted due to the differing values attributed to male and female roles in most cultures. Separate gender analyses would assist in reducing confounding variables and maintaining specificity rather than global generalizations.

Two, the writer considers it important to avoid global generalizations about a culture, utilizing instead specific subgroup references based on gender, age, sample group, etc. It appears that different ages and different subgroups react differently cross-culturally and intra-culturally. Therefore, it would seem to be dangerous to lump people together and make generalizations between various cultures when there are variations even within cultures.

The third point is the importance of semantic clarity and the use of statistical significance in interpreting the research findings. Utilizing only the most frequent type from the type table may mask significant effects. Therefore, the writer believes it is important to also look at the modal type and other secondary effects. Cross-cultural research is inherently complex and, as such, to ensure clarity and accuracy, requires complex, in-depth analyses of the data.

Fourth, from an education perspective, consideration should be given to the acknowledgment of individual, as well as gender and cultural differences, in order to assist teachers in developing the most suitable curricula to help all of their students succeed as individuals in school.

Concluding Remarks

Type theory, and in particular the MBTI, holds considerable promise for cross-cultural research. Such research should lead to a greater appreciation of those whose culture, customs, values and typologies are different from ours. Such study also helps individuals to become aware of themselves from both an intrapersonal and an interpersonal perspective. If our educational systems promote cultural values and cultural values influence our educational systems, the implementation of type theory in the classroom would give an appreciation of inter-cultural and intra-cultural differences in children.

The most important finding of this study lies in understanding the value of the MBTI as a powerful tool for assisting teachers in truly individualizing instruction in the classroom through the application of type preferences in teaching to type. Research demonstrates the value of teaching to type in meeting the individual needs of students. Motivation comes through influencing individual

preferences on a meaningful level. The MBTI and type theory can be effectively used in this era of ongoing curriculum reform as

> schools are being told that they are accountable for educating every child. They are required to teach basic skills, so that every child grows up able to read, write and balance a checkbook. And they are required to plant various sorts of knowledge, deeply enough so that it will germinate, take root and bear fruit.
>
> Both demands are better met if the schools take into account the type differences among children. These are not simply quantitative differences that can be expressed simply as higher or lower degrees of mental ability. They are quantitative differences, differences as to the kind of perception and the kind of judgement that the child prefers to use. It is his preferences that make his type. Children of different types have a different "mix" of abilities, different needs, interests and motivations and different degrees of success in school. (Myers, cited in Lawrence, 1992, chap. 11, p. 1)

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Appendix A

CONSENT FORM

A study of the learning style, typology and self-concept, and the resultant implications for education and counselling with students in grades seven through nine is being conducted by Dr. F. Boersma and Pat Rosin of the Educational Psychology Department of the University of Alberta.

I/we_____(parent/guardian) give permission for my/our child _____ to participate in the above-mentioned research.

I/we understand that no personal information about myself or my child will be given out and that the results of this study may be used for teaching, research or publication purposes.

_____ _____

Date Signature of parent/guardian

_____

Signature of student

_____ _____

Age Grade

_____

Gender (M/F)

Appendix B

169 Greenbrae
52521 R. Rd. 222
Ardrossan, Alberta
TOB OEO
October 12, 1992

XXXXXXXXXXXX
XXXXXXXXXXXX School Board
XXXXXXXXXXXX
Edmonton, Alberta

Dear Dr. XXXXXXXXX,

I recently had the privilege of conducting part of my research for my Master's thesis at XXXXXXXXXXXXXXXX School. I was most impressed with the level of self-discipline and responsibility shown by the students when I was in the school. As well, the staff were very cooperative in assisting in the administration of the research instruments. XXXXXXXXXXXX and his staff certainly appear to have found a formula for success at XXXXXXXXXXXXX School.

I am enclosing a copy of the letter I sent to XXXXX after my data was collected. I appreciate the cooperation of the XXXXXXXXXX School Board in allowing students to conduct research in the schools.

Sincerely,

Pat Rosin, Grad. Student